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# CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT


**ADDRESSES AND ORIGINAL ARTICLES**

Suggestion, Hypnotism, and the Will. By WILLIAM BROWN, F.R.C.P. ..... 1039

Surgery of the Blood-vessels. By Sir WILLIAM WHEELER, F.R.C.S.... 1042

Orthopædic Treatment in Poliomyelitis. By ALAN H. TODD, F.R.C.S.—(*Illustrated*) . 1044

Alum-toxoid as an Immunising Agent against Diphtheria. By J. C. SAUNDERS, M.B. 1047

**CLINICAL AND LABORATORY NOTES**

Irritation of the Vagus by a Tumour of the Carotid Body. By M. COKE, M.R.C.S., and H. A. DUNLOP, M.R.C.P. 1050

Barium Enema in Diagnosis of Intussusception. By R. H. BOGGON, F.R.C.S.—(*Illustrated*) . 1051

**MEDICAL SOCIETIES**

Royal Society of Medicine: Sections of Surgery and Medicine: Acute Appendicitis..... 1053

Section of Psychiatry: Schizophrenia ..... 1055

Section of Otology: Lateral Sinus Thrombosis ..... 1057

Liverpool Medical Institution: Diabetic Lipæmia 1059

**REVIEWS AND NOTICES OF BOOKS**

The American Illustrated Medical Dictionary. By W. A. N. Dorland, M.D., and E. C. L. Miller, M.D..... 1060

A Text-book of Pathology. By Prof. W. Boyd, F.R.C.P..... 1060

Mothercraft, Antenatal and Postnatal. By R. C. Jewesbury, F.R.C.P... 1060

The Breast-fed Baby in General Practice. By L. G. Housden, M.B... 1060

Materialism. By J. S. Haldane ..... 1061

Manuel pratique de dermatologie. By A. Desaux and A. Boutelier 1061

A Text-book of Clinical Neurology. By Prof. Israel S. Wechsler, M.D. 1062

Technique of Ultra-violet Radiology. By Prof. D. T. Harris, M.B..... 1062

Surgical Pathology of the Female Generative Organs. By Prof. A. E. Hertzler, M.D. ..... 1062

Legal and Ethical Aspects of Medical Quackery. By L. Le M. Minty, B.Sc. ..... 1062

**LEADING ARTICLES**

THE SERUM TREATMENT OF POLIOMYELITIS .... 1063

PREVENTIVE DENTISTRY. 1064

THE DOCTOR'S DAY..... 1065

UNEMPLOYMENT AND HEALTH ..... 1065

**ANNOTATIONS**

Pyelitis in Pregnancy.... 1066

Prolonged Artificial Respiration ..... 1066

University of Durham: Newcastle College of Medicine ..... 1067

Gall-stones ..... 1067

The Risks of Specialist Practice ..... 1068

Modern Aids to Anæsthesia ..... 1069

Alum-toxoid as an Immunising Reagent.. 1069

Infant Life Protection.. 1069

Early Impressions of Chloroform Capsules .. 1070

**PANEL AND CONTRACT PRACTICE**

Scope of Treatment under the Act..... 1084

**NEW INVENTIONS**

Mask for Use with Chloroform Capsules. By L. H. Lerman, M.R.C.S.—(*Illustrated*). 1059

**THE DOCTOR'S DAY**

I.—General Practice in a City ..... 1074

**SPECIAL ARTICLES**

Medicine and the Law: Alleged Exploitation of Patients. — A Priest's Refusal to Answer .... 1071

Vienna: Congress of German Pædiatricians in Vienna..... 1072

Ireland: Milk Legislation ..... 1073

A Students' Hostel.—(*Illustrated*) ..... 1080

**CORRESPONDENCE**

"A Course in Osteopathy" (Mr. Blundell Bankart)..... 1076

Carbohydrate Metabolism in Toxic Goitre (Dr. W. Cramer) ..... 1076

Proteolytic Ferment in Amœbic Dysentery (Sir Aldo Castellani) ..... 1076

An Anomaly of the Colon (Mr. F. Forty) ..... 1077

Auxiliary Treatment of Toxic Diphtheria (Drs. E. C. Benn, F. Hughes, Stanley Alstead, and B. A. Peters)..... 1077

Thrombo-phlebitis Migrans and Thrombo-angiitis Obliterans (Dr. Parkes Weber)..... 1077

Ambulatory Treatment of Leg Fractures (Mr. Watson Jones)) ..... 1078

Typhoid in Yorkshire (Mr. Juan Butler) ..... 1078

Reactions Following Tumour Irradiation (Drs. H. Chambers, G. M. Scott, and Prof. S. Russ) 1078

**THE SERVICES**

Royal Army Medical Corps.—Indian Medical Service.—Royal Air Force.—Hon. Surgeon to the King.—Colonial Medical Service ..... 1083

**OBITUARY**

Prof. Alfred Bostock Hill, M.D.—(*With portrait*).. 1088

Henry Ambrose Lediard, M.D. ..... 1088

**PUBLIC HEALTH SERVICES**

Typhoid in Yorkshire.... 1085

Infectious Disease in in England and Wales 1086

**MEDICAL NEWS**

Univ. of Oxford..... 1081

Univ. of Cambridge.... 1081

English Conjoint Exam. Board ..... 1081

Roy. Coll. Surg. Edin... 1082

Roy. Coll. Phys. Edin. .. 1082

Joint Tuberculosis Council 1082

Univ. of Liverpool ..... 1082

Univ. of London ..... 1082

Univ. of Bristol ..... 1082

Univ. of Durham ..... 1082

Fellowship of Med. and Post-Grad. Med. Assoc. 1082

Harveian Society of London.—(*With illustration*)..... 1082

Dinners ..... 1083

Medical Officers of Schools Assoc. ..... 1083

Eugenics Society..... 1083

Cecil Houses ..... 1083

Royal Med.-Psychol. Assoc. ..... 1083

Soc. of M.O.H.'s ..... 1083

Med.-Chirurg. Soc. Edin. 1083

Jewish Health Organisation ..... 1083

Public Health Congress.. 1083

Royal Sanitary Institute 1090

**PARLIAMENT**

Notes on Current Topics: Mental Treatment Act, 1930. — Edinburgh Maternity Hospital.... 1086

House of Commons: The Spahlinger Vaccine. —Cancer among Nickel Workers.—Slum Clearance and Re-housing. — Condemned Houses in Edinburgh.—Safety of Life at Sea ..... 1086

Births, Marriages, Deaths 1087

Medical Diary ..... 1088

Appointments ..... 1090

Vacancies ..... 1090



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Modern investigations of the phenomena of suggestion and auto-suggestion are throwing further light upon the nature of the will. In suggestion as ordinarily understood the mind is regarded as in a momentary state under the driving force of ideo-motor action. An idea, an impression, a thought, is in the mind, and that thought tends to pass over into action. Indeed, Pierre Janet's theory is that in suggestion an idea produces its maximum effect, and conditions favourable to suggestion do tend to produce the maximum effect, keeping other considerations—competing considerations—in abeyance. In ordinary normal mental life idea follows idea, and you have a train of mental activity going on, as it were, on the surface of the mind, and any particular idea is not given time to produce its maximum effect, but is quickly replaced by another. But in formal suggestion treatment, what is aimed at is to give this idea its full chance to express itself to the fullest possible extent. So suggestions of muscular power take effect as long as ideas of muscular feebleness, difficulties, and doubts are kept in abeyance. The idea of a sensory experience, such as a feeling of heat or pain, can be intensified and allowed to produce its full effect. An idea of a burn or blister will actually raise a blister in a hypnotised patient where competing ideas are kept away. Ideas are not mere ideas, they are also forces. They carry with them not only a cognitive aspect but also a conative aspect, an aspect of striving, a tendency to bring about some change in the outer world or in the inner world. In suggestion an idea is given an opportunity of developing itself to its full extent. That is one way of thinking of suggestion.

### Suggestion and the Subconscious

Prof. W. McDougall defines suggestion as the acceptance of an idea independently of logically adequate grounds for such acceptance. A subject of successful suggestion treatment accepts what is said to him independently of logically adequate grounds. But here the word acceptance can have more than one meaning. The individual may consciously accept and nothing may happen. Conversely an individual may consciously reject or doubt and yet something may happen. The acceptance of the idea depends on the condition of another part of the mind than the conscious mind—viz., on the condition of the subconscious mind, the background of the mind. That again is merely a popular term. The subconscious is the sum total or system of fundamental tendencies, urges, instincts, interests, which the individual has inherited from previous generations, and others which he has developed on the basis of his earlier inherited instincts. All these are of importance to him. In his conscious mind he may not have a clear and adequate view of what are the most important urges of his life. Consciously he may attach himself to certain aspects of existence, certain desires and wishes, whereas the desires and wishes that are fundamentally more important and move him more are hidden (more or less) in the subconscious. Suggestion appeals to these subconscious wishes and desires, and the realisation of suggestion is the realisation or modification of such wishes and desires. Hence the surprising results which may sometimes occur in hypnotic suggestion. Certain suggestions may be hardly accepted at all, hardly reacted to, although the person seems to have obvious reasons for responding. Other suggestions may be accepted, although there is no obvious reason in consciousness why they should be. This is specially the case with regard to pathogenic or bad suggestion. A person does not consciously wish to be ill. He consciously fears illness. Nevertheless he may have a subconscious desire for illness because of a craving for sympathy or for power over relatives, or to preserve his self-respect in the face of apparently insurmountable difficulty. He may cut these fears out of his conscious mind and yet retain them in full force in his subconscious. There are two general forms of fearlessness: the fearlessness of the individual who has faced the ordinary possibilities of danger and has recognised once and for all that fear is no good and gives it up, and that of an individual who finds the experience of fear a painful process, and so turns away from it but does not really face the matter, and then can be easily taken off his guard, and subconscious fear may surge up or may manifest itself in consciousness in distorted ways. Fear is an important factor in the working of suggestion even on the fully conscious level, but it is very much more important when working on the subconscious level.

### Suggestion, Instinct, and Emotion

Nevertheless it is not only fear and desire that may explain the realisation of suggestion, but the working of every fundamental instinct. There is not a primary instinct that does not bring its own suggestive tendency. Self-assertion, self-abasement, gregariousness, curiosity, whatever it may be, brings its own suggestion. The secondary emotional tendencies also bring suggestion. Jealousy, which may or may not be a primary emotion, brings its own system of suggestion. A person under the influence of jealousy is ready to believe statements about a rival which he would not believe if he had a completely clear and rational view of the situation. Baudouin has put the matter in the following way. He regards emotion as an auxiliary factor, a factor that helps suggestion. This statement needs qualification and correction. The truth is, firstly, that the instinctive tendency underlying the emotion is in some cases the driving force of suggestion; and secondly, that the emotion is often a sign of conflict, of a lack of unity of the mind. The mind is not at one with itself, and in this condition suggestion is more likely to be accepted. For in these cases emotion is not so much cause as effect. Emotion is a sign that the person is not in harmony with himself, and can be taken off his guard, and thus become the victim of suggestion. He cannot marshal his intellectual powers and ideas, to bring them to bear on the situation. He has been carried away by the suggestion before he has really begun to think about the matter.

### Suggestion and Volition: the Law of Reversed Effort

Then the problem of suggestion impinges upon the problem of will, in the facts under the general "law

* Paper read to Section J (Psychology) of the British Association for the Advancement of Science at York on Sept. 2nd.

of reversed effort." The facts had long been recognised, but Coué was the first to summarise them in a paradoxical and challenging way. "Where the will and the imagination are in conflict," he says, "the imagination always wins." And he identified imagination with suggestion. In his little book, "La Maîtrise de Soi-même," the word imagination in French is interchangeable with suggestion. He puts suggestion or imagination higher than will. One feels there must be some error here, because according to any systematic theory of psychology, will is the highest form of mental activity. Will indeed is the entire mind in action in its unity—so far as at any moment it is a unity—it is the character fully expressing itself. If the character only partially expresses itself, the man's actions may not be entirely in harmony with his character. If the other sides of the character show themselves later the person may feel remorse or regret. He would not feel this if his mind had previously been acting in its entirety.

How are we to explain the law of reversed effort? Let us take examples. (1) A desire to remember a proper name. We are unable to do so; we make an effort, and we find that the more effort we make the less we succeed. Whereas before, the name was "on the tip of the tongue," it now seems entirely to retreat, and leaves no sign in consciousness. On the other hand, if, instead of willing and making an effort, we calmly think to ourselves that the name will come to us presently and that we will not bother about it, we find that it does come. Or (2) when we are learning to ride a bicycle, if we see a stone in the road, and become alarmed and make an anxious effort to avoid it, there is a tendency for the bicycle to make a bee-line for the stone. On the other hand, if we keep calm and cool, and simply affirm to ourselves that we are going to avoid the stone, we do avoid it. In the effort to remember the name or avoid the stone, have we will? We have desire and wish—a wish that is spasmodic, that is violent, but we cannot say that with our whole mind we have willed to avoid the stone or remember the name, because will in its complete form carries with it *belief that we shall succeed*. That is why, as Aristotle said, we cannot will the impossible. We can will what we believe to be possible, although it actually is impossible, and then we fail. Where we know that the result is impossible we cannot will. In the case of the forgotten name there is a fear of failure checking and preventing us from reaching the complete stage of will. If we can reach the complete stage of will, believing that we are going to remember the name, that will produce the maximum effect. But in the condition of effortful wish, the spasmodic effort arouses and intensifies the fear of failure, which prevents the belief in success. Belief in the possibilities of success, the essential constituent of will, is absent. You have wish instead of will. You have suggestion accompanied by fear of failure, based upon the fear instinct or the danger instinct. And against that you can only put the desire to succeed, unaccompanied by any special emotion. This is put against the idea of failure, accompanied by fear of failure, which is what Coué means by the imagination.

There is really a conflict between two imaginations—the imagination of success and the imagination of failure. The imagination of failure is accompanied by a feeling of fear. There is no real conflict between will and suggestion, but a conflict between one suggestion and another suggestion. The state is a state of incomplete will. Coué was quite right in his practical conclusion that in order to get the maximum effect of suggestion treatment, patients should avoid effort, because effort tends to bring with it the idea of failure and fear of failure, and tends to neutralise any effort towards success. Our deepened knowledge of suggestion derived from its use in psychotherapy has deepened our insight into the nature of the will. We still hold that any patient suffering from psychoneurosis suffers from defective will. He needs to be helped to achieve complete volition. In some directions a patient is unable to will; if he tries to will, the law of reversed effort comes in.

A typical example is agoraphobia; a patient suffering from fear of open spaces cannot walk down the street or cross the street, becomes more and more panicky and nervous, and has to return home. And the more he tries the less he succeeds. It is not that his will is failing, but that he has not really completed the act of will in this respect, that he is unable to walk down a street alone and unable to reach that state of will which involves calm belief in success. A feeling of certainty is absent. Why? The reason can only be discovered by deeper analysis, going over the patient's past life and seeing how the agoraphobia set in. The memories and tendencies of those early experiences are of importance to the patient and to the doctor who wishes to cure him. The doctor helps him to will, to be capable of complete volition. In this volition, apart from analysis, it is necessary to get rid of spasmodic effort, because spasmodic effort brings fear of failure. If you encourage the patient to get rid of his fears, to keep calm, he will be more successful. And the way in which you give the patient advice is to encourage him to make the affirmation with confidence, with belief that he is going to succeed. If the patient calms himself down and says, "I am going to manage it," he is more likely to succeed. He has to attack the source of the fear by analysis, but suggestion treatment will help him to reduce the fear to a minimum when it does tend to rise.

In a way suggestion treatment is a supplementation of the will, or a help towards the completion of the will. The complete will carries with it the suggestion of success, an adequate control of the imagination. The individual has to train himself to imagine success. It is important, not only for psychoneurotic patients but for all of us, to train our imagination in this matter. That is why I am so emphatic that fear should be denied, should be turned away from, and in its place should be put confidence, and one should make affirmation to one's self that whatever happens one is not going to be afraid or disturbed. This is more than the spirit of stoicism. The spirit of stoicism is that evil, though inevitable, should be bravely borne, but in this attitude of mind you go further and "deny" evil. Having taken whatever steps are necessary to avoid danger, you refuse to let the thought of danger play upon you subjectively and lower your vitality by raising a feeling of fear. Likewise with lesser dangers and difficulties, there should be control of the imagination so that the mind is as active as it possibly can be in its unity.

### Auto-suggestion for the Normal Person

I should like here to emphasise the value and importance of formal suggestion and auto-suggestion for the *normal* person as a means of increasing his mental power in various directions. If he makes calm affirmations to himself while lying on a couch in a state of mental and muscular relaxation, such affirmations may be realised by subconscious mental activity and in this way he may improve his powers of mental concentration, his memory, and his mental aptitude along special lines. He may also correct bad habits and increase self-confidence and self-control.

Often suggestion treatment from another person is needed to give him a start, and then he can carry on by himself. The method acts by releasing mental tension and removing subconscious dead-locks and inhibitions, encouraging spontaneity and self-realisation. Above all it neutralises subconscious doubts and fears, and clears the way for the creative process that wells up from the depths of the mind. Thus it can revive failing inspiration in the realm of music and of the other arts, and can enable a discouraged person to believe in himself once more. By facilitating the imagination of success, and by giving precision and control in imagination, it contributes powerfully to adequate and complete volition in any special direction. Perseverance in the practice of auto-suggestion may sometimes transform a person's temperament and change him, for instance, from a worrying and self-tormenting hypochondriac into a man of calm tenacity of purpose and serene self-confidence.

### Personality and the Will

This brings one to the question of personality. When considering the question of will, the question of personality is not far behind. It is the same problem looked at from a different point of view. When we speak of the will we think of the momentary reaction of the mind to a particular situation; when we think of the character, we think of the totality of the mind expressing itself in the will. We are at once faced with the problem of multiple personality, and our best way of dealing with that problem is to avoid rushing to extreme cases of multiple personality and drawing premature conclusions from them, but to consider closely the variations of the so-called normal mind.

In the normal mind there is a tendency to alternation of mood and to multiplicity of ideals. Individuals have more than one ideal of themselves. Especially as children do they find from day to day and from week to week that they have different ideas as to what they would like to be, which are mutually exclusive. So the mind oscillates from day to day, and gradually settles down as one gets older under the pressure of circumstances, and a sort of natural selection goes on. Certain ideals are stamped out under the cruel influence of circumstances. The individual throws himself more and more into the following up of one ideal. But nevertheless he has to meet different types of people with different interests and ideals, and we find that he responds to them in different ways. He is certainly a different kind of person in one general environment from what he is in another. His business self is different from his social self, and both differ from his religious self. With every single person he meets he is slightly different. He does not show the same side of himself to different people. These different aspects are, in a way, subsidiary selves and one can be encouraged at the expense of others.

Besides that there is a more fundamental unification, the more fundamental self, of which these are manifestations. The question is whether that more fundamental self is something existing at the beginning and continuously present and active through life, or something that is gradually being developed. From the purely scientific point of view there is much to be said for the theory of development, that the personality is created partly through identification with different types of people who call out admiration, and partly under the impetus of innate tendencies. Besides that there is the work of reason, which is of great importance. The individual learns from experience, and knows that if he follows up certain spontaneous fundamental tendencies he suffers for it; he is unhappy and makes other people unhappy. Besides this he gets a feeling of lowered worth.

Here we must admit an intuitional element. We must assume that the individual comes into the world with the power of discovering values through intuition or direct insight. Just as he can discriminate values in beauty, truth, and goodness, so he can discriminate values as regards personal activities. This power is to a certain degree a power of creation. The mind pushes forward, develops out of the primitive levels, the earlier stages of evolution, and is continually pushing forward, and it is reminded of this especially when it fails, when there is regression. And of course in wrong-doing there always is such regression. But especially in pathological cases, in nervous illness, is there a regression, and the symptoms are signs of such regression. The mind is failing in some directions to proceed, and is retreating from reality. And in order to save itself from the realisation of this retreat it becomes definitely ill.

Illness is a piece of apparent bad fortune that prevents the mind from understanding the true situation and relieves it of the responsibility of failure. In treatment therefore we have to encourage the patient to face the situation more fully, and to be ready to accept responsibility once more. But I admit that this is a hard saying and in some cases really too hard. Often the illness is the result of failure to deal with responsibility almost too heavy for the individual's shoulders, and the main burden of responsibility should be placed not on the individual but on society. There is such a thing as collective responsibility, and in many cases the responsibility for the failure of some particular individual may be more the responsibility of the people around him. Where a person has become psychoneurotic through unfortunate experiences in early life, the responsibility rests on the shoulders of those who should have protected the child from such experiences, rather than on the child itself.

We find that just as auto-suggestion strengthens the will, because it gives the patient the opportunity of controlling his imagination, so analysis is an indirect means of training the will. Through analysis the individual is relieved from false personality, from undesirable influences of early life, undesirable identifications, &c., that have taken place. As the patient reviews his past life, as these influences come up, he sees them for what they are and can simultaneously free himself from them. He realises how much was just childish imitation. He can bring reason to bear and later experiences to bear, and see things in their true proportion, and so judge their value more truly.

### Multiple Personality

Finally we have to decide about the more extreme cases of multiple personality. We must bear in mind the possibility that they are artificially produced or intensified through the hypnotic methods employed in investigating them. They are small in number, few and far between. One does not question the bona fides or genuineness of the scientists, many of them of high standing, who have reported such cases, but it is possible that in trying to describe the cases they may have made the facts too clear-cut. An investigator of such experience in these matters as Dr. Morton Prince has emphasised his belief that multiple personality is not a denial of the unity of the mind. These persons are one, and only many in the sense that they are one. These other personalities of theirs are aspects of the one personality. The main reason for the limited aspect of the subsidiary

personality is a breaking across of the memory continuum. But that is not the only characteristic. You seem to have a dissociation not only of past memories, but also of instinctive dispositions, and this shows itself in a selective influence over the memories. Certain sets of memories are controlled by the self-assertive instinct, others by the instinct of self-abasement, and so may arise an alternation of a depressed with an elated personality.

The cause of dissociation may be physiological and ultimately physical. It may be that through fatigue toxins are produced which paralyse some of the synapses of the higher levels of the nervous system, so that you get a dissociation on the cerebral side, and the brain cannot function as a unity. So with rest and physical treatment these patients may gradually recover. On the mental side, too, there is incompatibility of thought, mental conflict, a deadlock, and one side or the other has to give way.

### The Psychology of Conversion

It is in such a mental situation as this that the phenomenon of conversion may occur. In conversion you have a change of heart and mind, almost a new birth, the appearance apparently of a new person. Probably in its true form it is a process of growth. There has been a certain incubation period during which ideas have been maturing—a new outlook has been maturing—but it does not come into consciousness until a later stage of development is reached, and the person looks back on his past self as dead. He rises on stepping-stones of his dead selves. Indeed it is possible that this is really the most accurate way in which we can describe the development of the mind. We hold certain general ideas which must later on be superseded, we pass from ideal to ideal, and as we near the achievement of some ideal we realise its weakness and shortcomings, and a new ideal, a further prospect has been opened to us. "New occasions teach new duties." That may come sometimes very suddenly in the form of a conversion experience. In religious psychology conversion is best defined as a turning away from a merely naturalistic outlook on life to a more spiritual outlook, a turning from the temporal to the eternal, a realisation that there is an eternal aspect of life where one may be spiritually secure independently of whatever misfortune may befall one. The personality suddenly recrystallises into a new mental attitude with an altered scale of values, and with renewed energy and inspiration, and a deepened insight into the meaning of existence.

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## SURGERY OF THE BLOOD-VESSELS*

BY SIR WILLIAM WHEELER, M.D. DUB., HON. F.A.C.S.

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THOSE who have paid homage to Murphy at these great assemblies in past years have alluded specifically to some branch of his work, and some have recorded their own experiences in surgery in order to emphasise their indebtness to his teaching. The scope of Murphy's writings is so wide that each successive speaker has been able to find a path which covers new ground. By referring to individual and detached cases I will endeavour in small measure to follow this precedent, and I propose to begin by speaking of the surgery of the blood-vessels.

This branch of surgery became a favourite subject of research and of practice during the opening years of the last century.[1] The teaching of John Hunter was carried across the Atlantic by Wright Post to New York, by Physick to Philadelphia, by Gibson to Baltimore, and by Warren to Boston. One surgeon alone, Valentine Mott, ligatured the common carotid 43 times, the external carotid once, the first part of the subclavian once, and the third part of the subclavian four times. It is no matter of surprise, says D'Arcy Power, that the tradition of the surgery of the blood-vessels is stronger in the United States than it is in this country. Prof. Rudolph Matas has notably maintained the tradition at New Orleans by his reparative treatment of aneurysm which is based upon experimental surgery in the true Hunterian spirit.

Murphy was at home in the realm of vascular surgery. In the year 1896 he performed the first recorded end-to-end suture of a divided artery. His description of how he approached a false aneurysm of the axillary artery by division of the clavicle and ligature of the subclavian artery is a noteworthy contribution to his surgical records. He paints a dramatic picture of a case of aneurysm of the internal carotid artery mistaken for a tonsillar abscess. Then comes the mention of 13 different forms of treatment for aneurysm, and finally the statement that no surgeon should start the active practice of surgery until he has done a considerable amount of experimental work on the arteries and veins of dogs.

### LIGATURE OF THE INNOMINATE ARTERY FOR RIGHT SUBCLAVIAN ANEURYSM

In May last I ligatured the innominate artery for aneurysm of the subclavian artery involving the first and second stage.

The patient was wounded in 1915; pieces of shrapnel were shown by X rays, scattered in the region of the right shoulder-joint, and portion of a bullet could be felt to the right of the suprasternal notch under the insertion of the sternomastoid muscle. The wall of the artery was apparently injured, but the aneurysm did not become evident until 1928, 13 years after the wound. It steadlily increased in size until the swelling above the clavicle reached the size of a duck's egg. The right recurrent laryngeal nerve was paralysed. The radial pulse was not affected, the blood pressure was the same on both sides. The X rays demonstrated some calcification within the sac. The Wassermann reaction was negative.

In some respects this tumour was not typical of aneurysm; there was no bruit, expansile pulsation could not be detected; there was no difference in the carotid or radial pulses when compared with those of the other side. The operation was designed to ligature the subclavian artery behind the scalenus anticus muscle at the commencement of the second stage.

The middle portion of the clavicle was turned downwards on the chest with its pectoral attachments. The aneurysm was laid bare and the bullet was removed. The external and internal jugular veins were found obstructed and distended. The supraclavicular and transversalis colli arteries spread transversely across the upper portion of the tumour. The scalenus anticus muscle had disappeared and the phrenic nerve was not located. It was soon seen that the sac extended to the bifurcation of the innominate artery, and that ligature of the subclavian vessel was impossible. It was obvious that without further removal of bone the innominate artery could not be exposed behind the sternoclavicular articulation without the rough handling of the aneurysm, which had led to disaster in many recorded cases. With chisel and mallet, the inner end of the clavicle together with the right half of the manubrium sterni (leaving the sternoclavicular joint intact) were separated and retracted

* Abridged from part of the J. B. Murphy oration delivered before the annual clinical congress of the American College of Surgeons at St. Louis on Oct 17th.

upwards and to the left. The innominate artery was now visualised in its entire length. The innominate veins were not seen; the pleura caused no embarrassment, the nerves remained hidden.

Two ligatures of No. 2 chromicised catgut were passed round the artery distal to the thyroidea ima branch. They were gradually tightened, taking care not to cut through the inner coats of the vessel. Pulsation at once ceased in the aneurysm and the radial pulse disappeared. Proximal to the ligature each pulsation appeared like a sledge-hammer blow upon the occluded portion. It looked as if the assault could not be resisted. For this reason an additional single ligature of catgut was placed round the artery near its origin from the aorta. The thyroidea ima was ligatured with fine silk. The divided portions of the sternum and clavicle were replaced in position and held by catgut passed through drill holes. Recovery was uneventful but for some downward displacement of the divided portion of the clavicle. In three days the radial pulse reappeared and within a week it was full and synchronous with the pulse on the opposite side. Four months after the operation the aneurysm had completely disappeared.

The lesson learnt from this case was that ligature of the innominate artery was not a difficult operation provided the old inadequate methods of approach were abandoned. Six weeks after ligature some slight pulsation could be felt in the aneurysm, but otherwise the cure appeared complete.

Up to and including the year 1922, according to Ballance,[2] there had been 57 ligatures of the innominate artery, with 19 recoveries.

A case of ligature of the innominate artery was exhibited by Mr. Coppinger, of the Mater Hospital, Dublin, at the Section of Surgery of the Royal Academy of Medicine in Ireland on Feb. 24th, 1893. The record states that this was the first successful case of ligature of the innominate artery ever exhibited at any medical society in Europe.

The ideal operation for subclavian aneurysm is excision of the sac after proximal and distal ligature. This has been successfully performed by Moynihan,[3] by Halstead,[4] who removed with the aneurysm a portion of the subclavio-axillary vein, and also by Braithwaite.[5] The possibility of ligaturing either the first or second portion of the artery is a condition precedent to excision. Both portions were involved in the sac in the case just mentioned.

In a volume on the works of Colles by Robert McDonnell,[6] who was President of the Royal College of Surgeons in Ireland in 1877, the operation of tying the subclavian artery is admirably described. Colles attempted more than once to ligature the first stage of the artery, a far more difficult procedure than ligation of the innominate. He thought that ligature of the first stage on the left side was almost an impossibility, but A. K. Henry [7] has shown that this operation is greatly simplified by an approach from behind.

### THORACIC ANEURYSM TREATED BY WIRING

Some years ago (1928) an ex-soldier was admitted to hospital with an aneurysm protruding through the chest wall to the right of the sternum below the clavicle. It appeared on the point of rupture.

The heart and aortic arch were shown in the radiograms to be greatly enlarged. It was thought that rupture might be delayed by consolidation if a wisp of Colt's wire was introduced. A month later the end of the wisp at the point where the wires are joined became superficial and later ulcerated through the skin. The junction was nipped with pliers and all the strands of wire were removed from the aneurysm. Three months after operation the patient died from gradual leakage into the mediastinum and pleural cavity? No post-mortem examination was obtained.

### ABDOMINAL AORTIC ANEURYSM

America holds the world's record for thoracic aneurysm treated by wiring and electrolysis. Colt [8] states that Dublin holds the record for abdominal aneurysm treated by wiring alone.

In August, 1910, a patient with a large abdominal aneurysm in the region of the cœliac axis was treated in Mercer's Hospital by the introduction of a cage of Colt's wires (150 in.) into the sac. He died suddenly on March 31st, 1928, approximately 18 years after operation. The doctor in attendance reported there was no abnormality of pulse or temperature, or signs of internal hæmorrhage when he saw him immediately before death, but no post-mortem was obtained.

In a second similar case [9] a wisp of 105 in. of wire was introduced into the sac of the aneurysm. After operation the man was passed as sound for service during the war as a stoker on a patrol trawler in the Naval Reserve. He died of leakage from a secondary dilatation of the aorta below the aneurysm while thus serving, four years and eight months after operation. At post-mortem examination the aneurysm was found completely consolidated. It was about the size of a full-time fœtal head. The wires had expanded uniformly. The specimen is preserved in the surgical museum of Trinity College.

The abdominal aorta was first ligated by Sir Astley Cooper. In 12 cases recorded subsequently the mortality was 100 per cent. Nevertheless, ligature below the renal vessels has been followed by success. Brooks [10] describes and illustrated a case which died of intestinal obstruction three months after successful ligation.

The prognosis of abdominal aneurysm without operation is unfavourable. The duration of the condition is said to vary from three months to three years.

### ANEURYSM OF THE POPLITEAL ARTERY

How the more modern conception of the surgery of the blood-vessels comes to our assistance may be illustrated by a case of popliteal aneurysm in a man aged 62.

The aneurysm resulted from a slight injury and had reached the size of a coconut. It had extended upwards from the popliteal space to the opening in the adductor magnus. The patient was a bad surgical risk. He was fat and short necked. His heart was fibrillating, his systolic blood pressure was 220, his pulse-rate 140. His foot was cold and gangrene was impending. The old operation of ligature of the femoral artery would almost certainly have been followed by gangrene. An extensive operation on the sac or amputation, in all probability, would have been followed by death.

A complete cure with restoration of the circulation in the limb followed resection of 1 in. of the artery in Hunter's canal and ligation of the femoral vein.[11] Resection of the artery is a radical form of sympathectomy and in this case produced increased heat and blushing of the foot. The sheath of the artery above and below the ligatures was injected with alcohol, as recommended by Sampson Handley, to ensure against transitory vasoconstriction.

The advisability of ligaturing both artery and vein or the vein alone, when there is a dangerous diminution of the blood-supply to a limb has only been recognised since the war. This recognition, reinforced by a better understanding of the surgery of the sympathetic nerves, has saved many limbs from death in recent years.

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# ORTHOPÆDIC TREATMENT IN POLIOMYELITIS

## IN THE ACUTE AND SUBACUTE STAGES

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In view of the prevalence of infantile paralysis at the present time, it will probably be useful to call attention to the importance of correct treatment in the early stages of the disease. Diagnosis is always difficult until the actual loss of power in certain muscle-groups has become evident. In other words, the disease is fairly well established, as a rule, before the diagnosis is made and treatment is instituted. It is all the more important, therefore, to retrieve as much as possible of the lost ground. Moreover, the right choice of treatment at this stage has a very direct bearing upon the ultimate functional capacity of the patient. It may, and often does, determine the complete recovery or the permanent loss of certain movements. This statement does not imply, of course, that treatment is the only factor that determines recovery of function or failure; that, notoriously, is not the case; for patients vary very much in their power of withstanding the disease and of recovering from its effects. One quite commonly finds that, in one and the same epidemic, two patients who appear to have been affected about equally in similar muscle-groups, and have received identical treatment, differ markedly in their degrees of recovery. The reasons for this are only very imperfectly known; probably several factors are involved, and at present they are beyond our control. But the important point to appreciate is that unless certain conditions, which are known, are satisfied, recovery of the paralysed muscles will be rendered impossible and a recoverable, preventable paralysis will be converted into a permanent one.

Furthermore, the rapidity with which appropriate treatment is begun seems to have a profound effect, not only upon the degree of paralysis that persists, but also upon the duration of restorative treatment necessary. Treatment at present cannot wholly determine the ultimate result of a case; in some cases (but not in all) certain muscles are foredoomed, and we cannot yet save them. But in many cases the muscles are not thus doomed; they possess the capacity to recover, and when they do so they can be destroyed by wrong treatment, they can be caused to recover by right treatment, and the extent to which they will recover, and the time taken in the process, will be largely determined by the speed with which that treatment is instituted. A week gained at the outset will probably save weeks, and possibly months, later on. The resulting material gain is, of course, enormous; many months of attendance at hospital for massage or for the performance of operations, the provision of splints and walking apparatus, and so on, mean a tremendous strain upon the resources of any family. A right choice of early treatment may well determine whether a patient is to be a lifelong cripple or a self-supporting citizen.

### PRINCIPLES OF TREATMENT

Standard text-books say little or nothing about the treatment of poliomyelitis in the acute stage. For the most part they content themselves with remarking that the treatment of infantile paralysis consists in massage, electrical stimulation, and the use of appropriate walking appliances, when necessary, and they give no indication as to the stage at which these treatments should be used, or their relative values. The result is that the average doctor is led to believe that electrical treatment and massage are the mainstay of treatment, even when the disease is recent in onset, and the public, who love anything mysterious and incomprehensible, pin their faith to electricity in any shape or form and clamour for it.

It is therefore vital to state, as emphatically as possible, that in the acute stage of infantile paralysis complete rest and relaxation of the affected muscles constitute the one and only indication in treatment as far as the orthopædic aspect of the case is concerned. It is not enough merely to keep the affected muscles at rest, though that is important; they must be physically relaxed as well.

A paralysed muscle that is stretched will not recover. That is certain. There is abundant clinical proof of this fact. If a paralysed muscle be stretched it will not recover, even though it be given electricity and massage. On the other hand, paralysed muscles frequently recover when given relaxation and nothing else. How long the capacity to recover with relaxation persists is not known. It is probable that when once a muscle has been severely damaged by poliomyelitis and by stretching, a physical change takes place in its structure which renders it incapable of full recovery. But if a paralysed muscle be protected from stretching from the outset it may recover to a considerable extent, even after a number of years, and in spite of a severe initial paralysis. The late Mr. T. H. Openshaw once showed at the Royal Society of Medicine a young man whose quadriceps had so far recovered, after the use of a caliper for 19 years, that he was able to discard the splint and enjoy the use of a stable knee-joint; and this was a patient whose initial paralysis was exceedingly severe.

Rest with relaxation is the sheet-anchor of the treatment of infantile paralysis in the acute and the subacute stages. This is fortunate, because it is, as a rule, a treatment that can be carried out easily and cheaply almost anywhere. It sometimes happens that infantile paralysis attacks a patient who is unable, by reason of distance or expense, to attend hospital, and that the only treatment possible is to provide correct splintage and rest at home. A striking degree of recovery often ensues.

Massage and electrical stimulation are undoubtedly valuable in the later, more chronic, stages of the complaint, though even there they are of less relative importance that the continuous protection of the damaged muscles by relaxation in appropriate appliances. If one had to choose, at any stage of infantile paralysis, between efficient splintage and any other method of treatment, the preference should undoubtedly be given to splintage.

It is often stated that infantile paralysis, being an affection of the motor nerve-cells, is painless; but this is not always or even generally true in the earliest stage of the disease, when some pain in the limbs or along the spine is often present. Exceptionally, the pain is severe. In all cases splintage is the most efficient means of relieving this pain. If fixation be good, relief is almost immediate and lasting.

### DISTRIBUTION OF PARALYSIS

It is not always easy to know which muscles to relax. When definite loss of power has appeared the proper line of treatment is obvious. But one would wish, if possible, to anticipate this stage in a case in

which the diagnosis of acute poliomyelitis seemed probable on other grounds. It is sometimes possible in such a case to feel the flabbiness of the muscles before definite inability to make voluntary movements has appeared; and it is useful to remember that poliomyelitis seldom affects individual muscles, but nearly always certain groups of muscles. If a group-distribution of suggestive flabbiness be observed in a case of probable infantile paralysis, the diagnosis is rendered so probable that treatment by relaxation of that group should be instituted at once.

One knows from experience that infantile paralysis is specially liable to attack certain muscle-groups. For instance, the quadriceps extensor cruris is more likely to be affected than the hamstrings, and the extensor group on the front of the shin is very likely indeed to be affected; more or less foot-drop is still one of the commonest stigmata of a bygone attack of infantile paralysis. As a general rule the paralysis is much more extensive in the early stages of an attack than it is eventually. If, then, one is called upon to treat a patient in the early stage, when no definitive signs have appeared, and several limbs perhaps are paralysed, the best course is to relax those muscles which (1) matter most, from the point of view of ultimate function, and (2) are known from practical experience to be most liable to attack.

### THE LOWER LIMBS

In the case of the lower limbs, the quadriceps and the extensor group on the front of the leg are the most important muscles, and are also the groups most liable to be affected. The indication is obvious; the foot must be supported at a right angle with the leg and the knee must be kept straight. (The nurses' beloved pillow behind the knees must here be strenuously avoided.) In the exceptional case, in which the calf was affected more than the extensor group, the reverse treatment would of course be necessary; that is to say, the foot would have to be placed in plantar flexion.

The principle should be carried through, however, to its logical conclusion. One of the commonest defects after extensor paralysis is a flail condition of the toes, which drop down uncontrollably and prevent the putting on of an ordinary boot or shoe. The usual type of splint has a right-angled footpiece, which either stops short of the toes and does not support them at all, or else supports them in the horizontal position midway between extension and flexion. Clearly they should be dorsiflexed by an appropriate cocked-up terminal portion or a suitable pad.

Weakness of the abductors of the hips, and especially of the gluteus medius, profoundly impairs the stability of the pelvis and of the body generally on the lower limbs. Therefore, if the abductors seem to be at all weak, or if both adductor and abductor groups be paralysed, and one does not know as yet which group will ultimately prove to be the more severely affected, the lower limbs should be widely separated to relax the glutei. (The function of the glutei in steadying the trunk upon the lower limbs is even more important than that of moving the thigh in various directions.) Incidentally one may observe that a paralysed gluteus medius is very difficult to substitute, either by the action of other muscles or by surgical operation; one should therefore take all the greater care to protect it when it is damaged.

### THE TRUNK

The paralyses of the trunk present a far more difficult problem than any of the limb paralyses. They are not easy to diagnose, though with care one can usually make out which are the preponderating masses that are affected: the effect of gravity comes in to a very important extent; they take, apparently, a particularly long time in recovering; and, most important of all, the functions of all the muscles are important, so that in relaxing any one group the conflicting interest, so to speak, of the opposing group has to be very seriously considered. It is impossible to lay down any fixed rules with regard to the position to be enjoined in any case of paralysis of the trunk muscles; each case must be considered according to general principles. It may be laid down, however, as fundamental that any paralysis, or suspected paralysis, of the trunk muscles necessitates complete and prolonged recumbency. It is probable that many of the cases of severe scoliosis that one still sees in hospital out-patient departments are due to paralysis of the trunk muscles having passed unnoticed and untreated, in face of the much more obvious limb affections. Even so, it is also probable that many trunk paralyses that have in fact been observed have been given insufficient treatment. Three months' complete rest and relaxation are the very minimum, and in most cases a year of recumbency or even longer is the proper period. Such treatment of course involves severe interference with a child's education, and in practice it almost always means residence in a special orthopædic hospital-school; for when the subacute stage has passed, prolonged treatment by massage and the like is indicated, and this can only be obtained in institutions by all but the richest parents. Nevertheless, the time and money are well spent, for thorough treatment of this kind often results in complete or very considerable recoveries even from severe paralyses. On the other hand, lack of treatment, or insufficient treatment, gives rise to some of the most unsightly and disabling deformities. Many of the extreme scolioses that are seen, formerly labelled rachitic, are undoubtedly due to neglected infantile paralysis.

The erector spinæ, the oblique abdominal muscles and the transversalis, and the quadratus lumborum, as well as the ilio-psoas, are all commonly and severely affected by infantile paralysis. The rectus abdominis suffers also, but perhaps less often, and so do the lesser muscles of the trunk. If the back muscle is affected as well as the abdominal, one is in a quandary; if the patient is sat up at all to relax the abdominals the back is being stretched and vice versa. Any raising of the patient is objectionable from the point of view of the action of gravity thus introduced; also the erector spinæ is perhaps irreplaceable, as compared with the abdominal muscles, which can be substituted to some extent by a belt or other device. Therefore, in such a case, it seems best, upon the whole, to keep the patient lying flat. Probably the best relaxation of both erector and abdominal muscles is secured by the prone position. Patients adapt themselves readily to this position, and sometimes indeed prefer it after a few days; at any rate, it seems to be theoretically correct; it gives good results, and it is worthy of being borne in mind as a variant upon the tedious supine position. In the acute stage it is certainly right, except when there is paralysis of the ilio-psoas or of the posterior muscles of the neck—i.e., the upper extremity of the erector spinæ. If the ilio-psoas is specially affected the patient should be raised at the hips, the back being supported flat—that is to say, the hips should be flexed, whilst the trunk lies flat but relaxed on a firm board or other support, hinged to the bed-frame at the level of the hips. The device is indentical, in fact, with that devised by Mr. F. G. Ernst for use in Pott's disease

with paraplegia, save that in the present instance no suspension or traction is needed.

When the cervical part of the erector spinæ is paralysed, prolonged recumbency, with the head extended and the muscles relaxed, is to be enjoined. Afterwards a mechanically-efficient head-support must be worn for some long time, lest continuous use of the weakened muscle tire it out and drop-head again appear.

### THE UPPER LIMBS

It is in the upper limb that severe and avoidable paralysis is often allowed to occur through failure to apply elementary principles. The deltoid muscle is usually given a very bad name in connexion with infantile paralysis; it is commonly said that it is very liable to be severely affected by infantile paralysis, and that it seldom or never recovers. It is true that it seldom recovers, but the implication that it is specially vulnerable and irresponsive to treatment is entirely erroneous. The only reason why the deltoid is so often and so severely paralysed is that it is seldom adequately treated. The patient is as a rule allowed to go about with the arm hanging by his side; if in hospital he is perhaps "rested" by bandaging the limb to the trunk. But in either case the damaged muscle is being stretched as severely as possible; small wonder that it fails to recover! The biceps and brachialis anticus usually recover, for they are relaxed by the customary position of carrying the forearm in a sling, but the deltoid never has a chance. Given a chance by elevation of the arm to a right angle, or even higher, the deltoid recovers just as well as any other muscle. It is so often affected in infantile paralysis of the upper limbs that it might almost be laid down as a standard rule that the arms should be fixed in elevation to a right angle, and this position should be maintained for some length of time, seeing that the dependent position not only stretches the deltoid over the head of the humerus, but also brings the weight of the whole limb into play in a downward direction. Certainly a patient whose deltoid has been paralysed should not be allowed to get up until an efficient shoulder-abduction splint, taking its bearing from the crest of the ilium, has been provided, and until strong voluntary contractions of the deltoid muscle can be performed in the recumbent position.

The efficiency of the treatment of the deltoid by elevation of the arm has now been demonstrated by a number of cases; the most striking within my experience was that of a doctor's daughter who had complete paralysis of one upper limb and of the opposite deltoid, in addition to extensive leg-paralyses. In this case complete recovery in both arms ensued and has persisted.

In some cases the pectoralis major is paralysed, as well as the deltoid; when this happens the arms should be fastened forward, as the child lies on his back in bed, so that the pectorales may be relaxed as well as the deltoids; and the latter, of course, must be relaxed by keeping the upper limbs elevated to a right angle.

### SPLINTS

The actual means of splinting a patient is of less importance than the observance of correct principles. But in the earliest stage, and especially when pain is at all a striking feature of the case, plaster-of-Paris is, in my opinion, unequalled. It is invaluable also in cases of trunk paralysis, for by its use plaster "beds" or casts can be made which fit the patient accurately, provide perfect rest and relaxation with comfort, and prevent deformity from unequal muscular pull. (For it must not be supposed that deformity results only from the effect of gravity in these cases, and that it cannot occur if patients remain recumbent; it can, in fact, be produced by unequal muscle-pull in recumbent patients.)

The plaster "bed" must be closely modelled to the patient's body in whichever position he is to lie upon it—i.e., supine or prone; it must fit closely to the contour of the body with a minimum of padding intervening; and it will take the form of an under-shell only, the front being left open. A plaster bed, made by a skilled orthopædic surgeon, is a very comfortable splint and by no means irksome.

For the lower limbs the lightest possible splints that are efficient are to be desired. They must hold the paralysed joints in such a position as to afford the affected muscles rest and relaxation; provided that they do that, the less they enclose and constrict the parts the better. Light splints of duralumin are excellent, though more expensive than sheet-iron; for many purposes the old-fashioned tin night-splint, made of tinplate and soldered together, has much to recommend it (Fig. 1). Web bands and buckles are better than constricting bandages as a means of attaching splints.

A good form of rectangular foot-splint is that in which a metal leg-trough is joined by a curved heel-bar to a flanged metal foot-plate; the heel-bar is made of metal firm enough to resist the muscles of the leg, but plastic enough to be modelled by the hand of the surgeon into the required position. This heel-bar carries a round stud at its centre, to which is affixed a well-padded strap that goes across the front of the ankle, thus keeping the sole well down upon the foot-plate. The flanges on either side of the latter prevent the rotation of the foot, inward or outward, which is such a trouble with the usual form of wooden back-splint with footpiece.

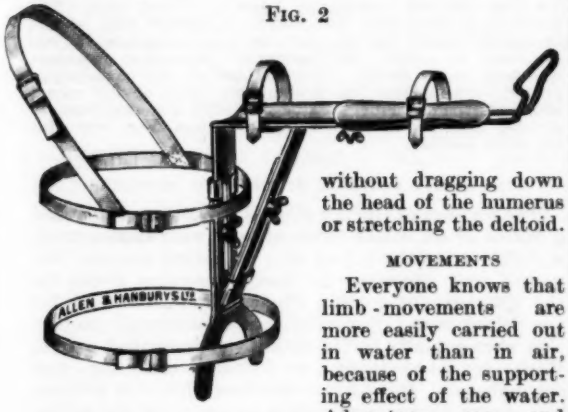
It is strongly recommended that cases of deltoid paralysis should not be allowed up during the earlier stages of treatment; they should not even be allowed to sit up in bed because of the action of gravity upon the limb. But when the time comes for ambulatory treatment an abduction splint, to keep the arm at 90° with the body, must be prescribed. Many of those which are in common use are badly designed, lose sight of their primary purpose, and do more harm than good. The weight of some is considerable, and this results in a downward pull upon the head of the humerus, which ought to be supported. In others the weight and leverage of the limb press the lower end of the metal body-piece against the lower ribs or against the side, and cause severe discomfort. The natural way to support the weight of the arm is taking a lift off the hip of the same side (as one does when standing with the hand resting there or in the trouser pocket); the only really satisfactory model

FIG. 1

A rectangular "night-splint."

of shoulder-abduction is, consequently, that which I originally devised (Fig. 2), in which the splint "sits" on the iliac crest. An abduction splint of this type, if properly fitted, will efficiently take the weight of the upper limb and keep it at a true right angle without dragging down the head of the humerus or stretching the deltoid.

FIG. 2




MOVEMENTS

Everyone knows that limb-movements are more easily carried out in water than in air, because of the supporting effect of the water. Advantage can and should be taken of this fact in the after-treatment of infantile paralysis. When the time comes for active muscular movements to be made, the patient should be placed in a warm bath and movements should be performed there. In this way it is possible to give voluntary exercise to muscles which, in air, the patient would still be unable to move. The method is of real value and is insufficiently known and practised in this country. It is not necessary to sacrifice the maintenance of the optimum positions of splintage in order to secure the advantages of the immersion method. With a little ingenuity simple apparatus can be devised.

For instance, in the case of the doctor's daughter, mentioned above, it was desired to maintain right-angled abduction of the shoulders, whilst permitting under-water exercise of the forearms and legs. A long narrow board was therefore arranged, of the shape of the child's mattress, but small enough to go into the bath; in this, holes were bored, and pegs were inserted into the holes, fitting round the child's body, so that she was held firmly in position, with the arms at right angles with her body, but free to move otherwise; at first, the pegs were put in high up, so that the arms formed an obtuse angle with the trunk; later, they were put in lower down, so that the arms came down to a right angle. The child was lowered bodily into the bath, lying on this board, and the entire treatment by active movements was carried out in water; she was then lifted out, dried, and put back into her ordinary splints.

How long rest and relaxation should be continued before massage and perhaps electrical treatment should be begun is a difficult question. Certainly complete rest should be enforced till all pyrexia, pain, irritability, and malaise have disappeared; the patient should be showing signs of the desire to move, and must have recovered from the state of contented apathy, before any attempt to add stimulative treatment is made. If in doubt it is wiser to wait than to hurry; more harm is done by premature treatment than by the lack of treatment. Probably no muscle that has suffered recognisable paralysis should receive treatment other than relaxation within a month; usually the interval should be longer, and it may be as long as two or three months. Manual massage should be the first method of adjuvant treatment to be added; its object is to stimulate the circulation and maintain the tone of the paralysed muscles. (Healthy opposing muscles may be treated gently, but must not be stimulated to over-action lest deformity be caused.) Electrical stimulation of paralysed muscles must be carried out with extreme caution in the earlier stages of the disease; anything approaching strong stimulation would do incalculable harm by stretching the damaged structure, perhaps irretrievably. Every contraction of a partially paralysed muscle, whether it be in response to a voluntary or an electrical stimulus, must be submaximal. Any attempt to get a contraction at all costs, by using a strong current if need be, is most strongly to be deprecated. A patient will not do more than he can of his own free will; if subjected to an electrical current he may have no option; for this reason I much prefer voluntary movements, under water if possible, to electrical treatment, in the early stages of convalescence. Even later, when electrical treatment can be used more freely, it is necessary to use it with circumspection for another reason; it is essential that the stimulus be applied to the paralysed muscles and vessels only, and not to their opponents, otherwise deformity will be aggravated; for this reason indiscriminate treatment of a whole limb in an electric bath is usually contra-indicated; it is only applicable in those relatively rare cases in which all the muscles of a limb have been equally affected. In the great majority of cases it is necessary for the various affected muscles to be treated personally by the electrotherapist, and in all cases it is vital to use such a current as will stimulate the paralysed muscles and not their opponents. To use such a strong current, in the hope of "waking up" a much-paralysed muscle, that it goes through to the opposing group, is to do double harm.

Electricity, however, and massage have no place in the early treatment of acute poliomyelitis; at that stage there is one treatment and one only—viz., rest with relaxation.

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## OBSERVATIONS ON THE USE OF ALUM-TOXOID AS AN IMMUNISING AGENT AGAINST DIPHTHERIA

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THESE notes are based on the writer's experience in dealing with an endemic of diphtheria in the city of Cork, where in the year 1930 the incidence reached 7·9 per 1000. In view of the fact that all the accepted methods had failed to stem the course of the disease, it was decided to embark upon a campaign of active immunisation. This was commenced in June, 1929, and has had such a successful issue that it has now become a routine service of the public health department. The antigen used was the toxoid-antitoxin mixture (T.A.M.), produced at the Wellcome Research Laboratory, Beckenham. The number of cases treated by the end of 1931 amounted to over 7000.

Altogether 50 immunised cases were reported as suffering from diphtheria[1]; 11 of them were accepted as suffering from diphtheria contracted more than four months after receiving a full course of immunising injections. Only 2 had been Schick-tested and found negative after immunisation. The diagnosis was based on clinical manifestations alone. These cases are a source of anxiety to the field immunologist, and their periodic occurrence has led to the desire for the production of an antigen which

would be, in certain respects, an improvement on toxoid-antitoxin.

The qualities which such an antigen should possess may be summarised as follows: (1) rapid induction of immunity; (2) induction of an immunity higher in degree than that conferred by toxoid-antitoxin; (3) induction of immunity, even in "immunologically obstinate" individuals; (4) freedom from unpleasant reactions.

Glenny [2] refers to experimental work on the antigenic effects of an alum-toxoid produced by the addition of aluminium sulphate or potash alum to a diphtheria toxoid. Of 41 animals treated with alum-toxoid 29 were Schick-negative within three weeks, and all were immune by the fifth week. In the control series none was negative by the third week, and 8 were still Schick-positive as late as seven weeks after injection. Somewhat similar results on a smaller scale were obtained by Ramon by the addition of tapioca to toxoid. Glenny concludes that the increased antigenic response in both cases is due to delayed absorption.

We therefore tried alum-toxoid for immunisation on 436 children (varying from 8 months to 14 years of age). Treatment was commenced in November, 1930, and contact was maintained throughout with Dr. R. A. O'Brien, Director of the Wellcome Research Laboratory, through whose courtesy the necessary supply of materials was obtained.

Experience had already shown [1] that approximately 80 per cent. of unimmunised children were positive reactors. This fact, coupled with the difficulty of inducing parents to submit their children to a protracted series of injections, led us to dispense with the preliminary test, both at the clinics and in the day-schools. There remained, however, a third group of children in two institutions over which it was possible to exercise more complete control, and here a preliminary test was carried out.

The basis of comparison has therefore been worked out under three headings: (1) the percentage of *negative* reactors after immunisation in children treated with alum-toxoid and in those treated with toxoid-antitoxin, and the rate of development of immunity in both groups; (2) the number of *reported* cases of diphtheria occurring in both groups after treatment; (3) the rate of development of immunity in a group of controlled *Schick-positive* children in institutions.

In introducing the alum-toxoid, which is designated A.M.T., the laboratory workers were faced with an almost complete lack of experience of its use with human beings, and had to proceed with extreme caution in regard to the degree of dilution of the toxoid and the proportion of added alum. Four different batches were tried out during the experiment, and in assessing the value of the work done it is important to bear in mind the Lf value [3] of the different batches, which varies in proportion to the dilution of the toxoid and the amount of added alum. The following Table shows the relative composition of the different batches.

TABLE I

*Showing the relative composition of different batches of alum-toxoid.*

| Batch. | Dilution of toxoid. | Percentage of alum. | Lf value. |
|---|---|---|---|
| B6219 | 1 in 10 | 0·5 | under 1 |
| B6217 | 1 in 10 | 2·0 | 1·5 |
| B6539 | 1 in 1 | 7·5 | 11·0 |
| B6707 | 1 in 1 | 9·0 | 15·0 |

B6219 was the first batch used; only nine cases were treated with this antigen, which was withdrawn shortly after introduction.

The original procedure was to give a preliminary dose of 0·25 c.cm., and if no unpleasant reaction resulted to proceed to 0·5 c.cm., with two subsequent doses (at fortnightly intervals) of 1 c.cm. each. The procedure with the other batches was somewhat different. With B6217 our experience in the early cases enabled us to proceed straight away with a full primary dose of 1 c.cm. for the later ones without provoking any unpleasant reactions. With B6539 the procedure throughout was to give a preliminary dose of 0·5 c.cm. and two subsequent doses of 1 c.cm. each. The reactions (if any) with both B6217 and B6539 were almost invariably mild, but in one or two instances it was necessary to modify the technique. A similar procedure was used with B6707. No reaction of any consequence ever developed after the preliminary dose of 0·5 c.cm., although there was a greater tendency for reactions to develop after the subsequent injection than there was with the other batches.

RELATIVE POTENCY OF THE TWO ANTIGENS

The findings of Glenny and his co-workers suggested a period of six weeks between tests with alum-toxoid, and this was determined on. In actual practice this period was exceeded in many instances owing to the difficulty of getting the children to attend for the Schick test. Nevertheless a considerable proportion were actually tested within the prescribed period. With toxoid-antitoxin a further difficulty was encountered. Our early experience with this antigen had shown that it was useless to test children within a period of even three months after completion of treatment, as so many of them still yielded positive reactions. The period was therefore extended to six months. It must be borne in mind, therefore, that whereas in the toxoid-antitoxin group the tests were carried out six, nine, and twelve months after treatment, with the alum-toxoid the tests were performed in so many weeks. Nevertheless, the results have been sufficiently striking to justify the expectations on which they were based, and to serve as an index of the relative merits of the two materials as immunising agents.

TABLE II

*Toxoid-antitoxin. Analysis of results of Schick tests carried out after treatment.*

| Interval* | Results of Schick test. | | Percentage. Neg. | Interval* | Results of Schick test. | | Percentage. Neg. |
|---|---|---|---|---|---|---|---|
| | Neg. | Pos. | | | Neg. | Pos. | |
| months. | | | | months. | | | |
| 4 | 25 | 8 | 75·7 | 10 | 79 | 9 | 89·5 |
| 5 | 203 | 59 | 77·0 | 11 | 92 | 13 | 87·6 |
| 6 | 223 | 66 | 77·1 | 12 | 55 | 10 | 84·6 |
| 7 | 93 | 23 | 80·1 | | | | |
| 8 | 163 | 25 | 86·1 | | | | |
| 9 | 66 | 18 | 78·5 | Totals .. | 999 | 231 | 81·2 |

* Interval in months between last injection and date of Schick test.

Table II. represents 1230 children. In the subgroup tested within four months of treatment only just over 75 per cent. were negative. The figures for the five-month and six-month periods are slightly better, but it is not until the seven-month and longer periods are reached that the desired results are obtained—80 to 85 per cent. of negatives. In the group as a whole 81·2 per cent. were negative. There is a curious variation in the ratios in the various groups, which can only be attributed to idiosyncrasy. For instance, the maximum proportion of negative reactors (89·5 per cent.) occurs in the ten-month group, while the eleven- and twelve-month groups show a progressively smaller proportion of negatives.

Table III. comprises 270 individuals. In addition, there were 166 cases who failed to present themselves for the Schick test, and have therefore not been included for comparative purposes. It is to be read

in conjunction with Table I. There is a very marked improvement in the figures as measured by the proportion of resultant negative reactions. This depends upon whether the figures bulk largely in the interval period, 0 to 6 weeks, or in that of 7 to 12 weeks. This is what one would naturally expect, and it is necessary therefore to analyse the figures further.

### TABLE III

*Alum-toxoid. Analysis of results of Schick tests carried out after treatment.*

| Interval* | Results of Schick test, with batch numbers of materials. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | B6219 | | B6217 | | B6539 | | B6707 | |
| | Neg. | Pos. | Neg. | Pos. | Neg. | Pos. | Neg. | Pos. |
| 4 weeks | — | — | 6 | — | — | — | — | — |
| 5 ,, | — | — | 17 | 2 | — | — | — | — |
| 6 ,, | — | — | 21 | 3 | 65 | 7 | — | — |
| 7 ,, | — | — | 27 | — | 3 | — | 7 | — |
| 8 ,, | — | — | 20 | — | 2 | — | 5 | — |
| 9 ,, | — | — | — | — | 4 | — | 9 | — |
| 10 ,, | — | — | 3 | — | 6 | — | 18 | — |
| 11 ,, | 4 | 1 | 3 | — | 9 | — | 13 | — |
| 12 ,, | 2 | 2 | 9 | — | — | — | 2 | — |
| Totals .. | 6 | 3 | 106 | 5 | 89 | 7 | 54 | — |

* Interval in weeks between last injection and date of Schick test.

With B6219 all the cases come within the latter group, so that no further examination is necessary. With B6217 49 cases were tested within six weeks and 62 between seven and twelve weeks. In the former group 86·2 per cent. were negative and in the latter 100 per cent., while the group taken as a whole over the full period of twelve weeks yielded 95·5 per cent. of negative reactors. With B6539 72 children were tested on the expiration of six weeks as compared with 24 during the seven- to twelve-week period, and, as one would therefore expect, the group taken as a whole yields a slightly smaller proportion of negative reactors than the B6217 group. It is found, however, that of the 72 cases tested after six weeks no less than 90·2 per cent. yielded negative reactions, which is a very good showing indeed. As with B6217, of these tested between six and twelve weeks (24 in number) 100 per cent. yielded negative reactions. With B6707, all the cases were tested more than six weeks after treatment and all gave negative reactions.

These results may be summarised as follows:—

### TABLE IV

*Results of Schick tests carried out after treatment with different batches of alum-toxoid.*

| Percentage negative— | B6219 | B6217 | B6539 | B6707 |
|---|---|---|---|---|
| Over whole period .. | 66·6 | 95·5 | 92·7 | 100 |
| In 6 weeks (and under) | — | 86·2 | 90·2 | — |
| From 7 to 12 weeks .. | 66·6 | 100 | 100 | 100 |

In view of these figures it seems reasonable to assume that alum-toxoid will induce a rapid and high degree of immunity.

### INCIDENCE OF "IMMUNISED" CASES AMONGST THE DIPHTHERIA NOTIFICATIONS

Three alum-toxoid cases were notified. Two of them (brother and sister) were treated with B6219, receiving 0·5 c.cm., 1 c.cm., and 1 c.cm., on each of their three visits.

In one case diphtheria ensued within three weeks of the last injection, in the other six months later. Neither child had been Schick-tested after treatment. The Lf value of this batch is very low (less than unity). In the third case the batch used was B6217 and only one injection of 0·5 c.cm. had been administered. The child did not attend for the subsequent treatment and contracted diphtheria six weeks later. One may reasonably state, for practical purposes, that there has been no case of diphtheria reported among children treated with alum-toxoid, regardless of whether such children have been subsequently Schick-tested or not.

The confirmed attack rate among the toxoid-antitoxin cases in 1930 was 2·35 per 1000 (as compared with an attack rate of 25·69 per 1000 among non-immunised children under 15 years in Cork City during the year 1930), but if one includes all cases notified the rate is raised to 10·73 per 1000.

The occurrence of such cases has a deterrent effect. Of the 50 reported cases, the diagnosis of 19 was not confirmed after admission to hospital. Follicular tonsillitis furnished the bulk of them, but there were also cases of simple tonsillitis, membranous rhinitis, scarlatina, and "septic sore-throat." It is difficult to suggest how such cases can be avoided with any immunising agent, but nevertheless it is a curious and significant fact that there has not been so far a single such occurrence among the 436 children treated with alum-toxoid.

### THE SCHICK TEST IN CONTROLLED CHILDREN IN INSTITUTIONS

There are but two suitable institutions in Cork, both of them orphanages, and they were placed at our disposal by the authorities. The procedure was to perform a preliminary Schick test; the positive reactors were then segregated into two groups, one of which received alum-toxoid and the other toxoid-antitoxin. Six to seven weeks later both groups were again tested and the results noted. Curiously enough our results with the preliminary Schick test in both these institutions were completely different from those obtained among children generally in the city. The two institutions together furnished 405 children, of whom only 38·5 per cent. were positive, as compared with 80 per cent. among the general school population. Dr. H. J. Parish informs me that similar results have been obtained in poor-law schools in England. He estimates that in the average industrial school the immunity rate is in the neighbourhood of 60 per cent.

In order to ensure that exposure to infection should be as even as possible, each group was divided into classes; these classes were further subdivided as evenly as possible, one portion receiving alum-toxoid and the other toxoid-antitoxin. The first doses of prophylactic were administered early in April, 1931, and subsequently at fortnightly intervals. The alum-toxoid used was B6539. In the first instance 0·5 c.cm. was given and two further doses of 1 c.cm. each. Of toxoid-antitoxin 1 c.cm. was administered on each occasion. Approximately six weeks after the last injection the children received the secondary Schick test. The elimination of the original negative reactors, together with leakage caused by leaving school, reduced the number of cases submitted to the final test to 142. This is, admittedly, small but the results are sufficiently striking to justify publication, particularly as they conform closely not only to our own experience among the child population of the city generally, but also to the results obtained by Glenny with guinea-pigs.

### TABLE V

*Analysis of results of Schick test in children in institutions after treatment with alum-toxoid and toxoid-antitoxin (all cases).*

| Prophylactic. | Cases. | Neg. | Pos. | Percentage negative. |
|---|---|---|---|---|
| Alum-toxoid .. | 73 | 59 | 14 | 80·8 |
| Toxoid-antitoxin | 69 | 41 | 28 | 59·4 |

Taking the group as a whole, 80·8 per cent. of those treated with alum-toxoid were negative as

compared with 59·4 per cent. of the toxoid-antitoxin cases. In view of the comparatively indeterminate character of the figures, it was decided to make a further analysis on the basis of the nature of the original Schick reaction. Following the usual procedure this had been classified as "slight," "moderate," or "marked," according to the character and extent of the resultant inflammation. Owing to the unexpectedly large number of negative reactors and the consequent reduction of material for the experiment, there would seem to be no doubt now when reading the results of the preliminary tests that there was a marked tendency to include among the "slight" group a large proportion of cases which in the ordinary course of events would be classified as negative, with a consequent vitiation of the ultimate figures. This assumptiom receives confirmation from Table VI., in which the results have been separately analysed for the three groups.

TABLE VI

*Analysis of Schick tests carried out after treatment, according to the nature of the original Schick reaction.*

| Nature of original reaction. | Prophylactic. | Cases. | Neg. | Pos. | Percentage negative. |
|---|---|---|---|---|---|
| Slight .. .. | A.M.T. | 34 | 29 | 5 | 79·6 |
| | T.A.M. | 36 | 27 | 9 | 75·0 |
| Moderate .. | A.M.T. | 20 | 17 | 3 | 85·0 |
| | T.A.M. | 29 | 13 | 16 | 44·8 |
| Marked .. | A.M.T. | 19 | 13 | 6 | 63·4 |
| | T.A.M. | 4 | 1 | 3 | 25·0 |

There is no material difference between the two subgroups in which the original reaction was classified as "slight." This is what one would expect if the majority of the children composing the group were originally negative and not positive (or even slightly positive). There was a strong element of doubt in the reading of the original reaction, so that the two sets of figures do not serve well for the purpose of comparing the relative merits of the two prophylactics. In the "moderate" group there is a striking difference between the end-results. The cases treated with alum-toxoid yield 85 per cent. of negative reactions, as compared with 44·8 per cent. yielded by those who received toxoid-antitoxin. There is a similar differentiation in the group classified as "marked"—63·4 per cent. of negative reactors with alum-toxoid and 25 per cent. with toxoid-antitoxin. Both these groups were composed of children who exhibited definite and unmistakable positive reactions with the preliminary test. Taking the two groups together the proportion yielding negative reactions after alum-toxoid is 76·9 per cent., as compared with 42·4 per cent. after toxoid-antitoxin. These are the significant figures, and there is little doubt that they reflect the relative efficacy of the two antigens.

It seems clear that alum-toxoid is a definite advance on toxoid-antitoxin. The figures adduced have received confirmation in the recently published work of Park and Schroder [4] who have shown, both in children and guinea-pigs, that it has given better results than either toxin-antitoxin or formol-toxoid. Two hundred and twenty-eight children immunised with alum-toxoid gave an immunity rate of 98·2 per cent., as against 90 per cent. with toxin-antitoxin and 93·7 per cent. with formol-toxoid.

CONCLUSIONS

1. These observations are based on experience of 436 children treated with alum-toxoid and over 7000 treated with toxoid-antitoxin.

2. Alum-toxoid is superior to toxoid-antitoxin in the prevention of diphtheria. It induces immunity more rapidly.

3. In epidemic periods, when rapid induction of immunity is essential, alum-toxoid is the best antigen.

4. When administered in properly graduated doses the reactions caused by alum-toxoid are not more severe than those caused by toxoid-antitoxin.

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# Clinical and Laboratory Notes

## IRRITATION OF THE VAGUS BY A TUMOUR OF THE CAROTID BODY

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THE condition of the autonomic nervous system known as vagotonia, representing functional derangement rather than gross structural alteration, has been regarded by Eppinger and Hess [1] as resulting from a disturbed balance of endocrine secretion. However little favour the endocrinological aspect of the theory has received, there can be no doubt that patients are occasionally encountered whose symptoms are most reasonably explained in terms of vagotonia. Such patients receive some benefit from the administration of atropine, but this often to a lesser degree than might be expected because usually only one set of branches of the vagus is seriously involved, and since the over-excited terminals are less susceptible to the action of the drug than are the normal ones.

Stimulation of the vagus by the pressure of neoplasms is recognised, although paralysis is more commonly observed. In any case, the visceral effects are not usually obtrusive. Carotid body tumours may excite the vagal functions, but so far we have not seen a record of such severe and long-continued over-activity as in the case presently to be described. Stanford Cade,[2] in a paper in which many references to the literature will be found, points out the frequency of pain due to the pressure of these tumours on the cervical plexus. This author also mentions that dyspnœic and syncopal attacks occurred in one patient in whom, moreover, digital pressure on the tumour caused a sensation of giddiness.

### THE CASE DESCRIBED

The present case was that of a man, aged 36, who was admitted to the hospital in January, 1930, under the care of Sir James Purves-Stewart.

The patient was a labourer by occupation, and complained of abdominal pain, vomiting, and breathlessness. The pain was of a dull aching character, and was felt in the left side of the epigastrium where it began about one hour after each meal. From this point it spread upwards into the left side of the thorax and downwards into the left iliac fossa. Vomiting then occurred, giving relief of the pain. Some relief was also obtained by lying down or by taking bismuth. The occurrence of these symptoms, epigastric pain and vomiting, dated from August, 1928, a few weeks after

convalescence from an illness diagnosed as pneumonia, and during the one and a half years of their duration the longest period of freedom was two days.

In December, 1929, the patient experienced severe giddiness and breathlessness, which subsequently abated, leaving breathlessness and palpitation on exertion only. Constipation was severe throughout the period of illness, and during the three weeks prior to the operation presently to be described the bowels were opened on five days only, with the help of purgatives and enemata. Loss of weight was complained of, but no accurate figures are available.

Examination of the moderately emaciated patient showed pallor of the skin and mucous membranes, and coated tongue. A tumour of firm consistency was palpable a little way below the left angle of the lower jaw, deep to the sternomastoid; it was not attached to the skin, and felt as though it was composed of "several glands matted together."

In the abdomen the upper part of the left rectus was rigid and tender; there was no cutaneous hyperæsthesia. The central nervous system and cervical sympathetic were normal. The vocal cords moved normally. The lungs were normal to physical examination. The respiration-rate was 20 to 25 per minute.

The pulse-rate at the time of admission was 80 per minute. It subsequently fell to 52 for a period of six days, but before operation it had risen to 80. Otherwise the heart appeared to be normal. The blood pressure was 110/75 mm. Hg.

The blood count was as follows:—

| | | | |
|---|---|---|---|
| Red cells | 3,630,000 | Polymorph | 70% |
| White cells | 8,400 | Eosinophil | 0 |
| Hæmoglobin | 53% | Lymphocytes | 27% |
| Colour-index | 0·7 | Monocytes | 3% |

The blood Wassermann reaction was negative.

Unfortunately, a fractional test-meal could not be carried out as the passage of the tube gave rise to distressing vomiting. A single examination of the gastric contents showed absence of free hydrochloric acid and a total acidity of 0·072 per cent. No occult blood was detected in the stools. A barium meal and radiogram of the chest showed no abnormality of the stomach, but there was 48 hours' delay in the ascending and proximal half of the transverse colon.

On Feb. 4th Mr. William Turner removed the tumour. The operation proved not easy, as the lobulated mass was adherent to the surrounding structures; portions of the vagus and sympathetic had to be excised with resulting post-operative signs.

Microscopically the tumour was of the histological type known as carotid body tumour.

After the operation all the symptoms disappeared. There was dramatic relief of constipation and there was no recurrence of abdominal pain or vomiting. Eighteen months later the patient was written to asking him to attend for further examination; he replied that he was perfectly well, and that he was unable to leave his work as a miner.

### DISCUSSION

The question arises, were the symptoms described above caused by stimulation of the vagus, or were they due, at least in part, to some other cause such as the anæmia which was present. Moreover, it may be asked, what part can the carotid sinus be supposed to play in their production.

The anæmia was probably a sequel of the "vagal" dyspepsia, and may have been aggravated by the apparent lack of gastric hydrochloric acid. Nevertheless, the lack of hæmoglobin can easily have been in part responsible for certain symptoms, such as breathlessness and palpitation. The relation between the anæmia and indigestion is probably that of a "vicious cycle."

The variable pulse-rate can be interpreted as significant of a balance between intermittent irritation of the vagus tending to slow the heart beat and anæmia tending to quicken it. The carotid sinus, however, has to be considered in this connexion. Danielopolu and his co-workers[3] claim to have demonstrated that the carotid reflex is *amphitropic* in action; that is to say, it has both a pressor and a depressor component. The fluctuating pulse-rate of the present case can readily be understood in the light of this observation. The same conception as that of Danielopolu is implicit in a communication by Prof. R. J. S. McDowall to the Physiological Society.[4] This observer noted that when the carotid sinuses had been painted with cocaine, the application of warmth to the skin caused a marked fall in arterial blood pressure, but not in every case; in some of the experiments the vagi had been cut so that part of the response may have been made possible by loss of the vago-pressor reflex. The normal slowing of the heart beat which occurs when the vagus is compressed in the neck is due to pressure on the carotid sinus rather than on the vagus itself, and the giddiness which ensued when this was done in Stanford Cade's case, referred to above, probably represents an exaggerated example of this phenomenon.

The constipation was undoubtedly due to vagal stimulation, since it was relieved from the day following the operation. The reason why pathological stimulation of the pneumogastric nerve should cause constipation is not clear, since the physiological teaching is that the action of this nerve on the gut is to increase peristaltic movement; possibly spasm may be set up. It is noteworthy that in the present case there was no delay—rather the reverse—in the passage of contents through the stomach and small intestine, but that there was great retardation in the ascending colon and proximal half of the transverse colon. Both of these regions of the large intestine are innervated by the vagus, in contrast to the distal colon which is supplied by the sacral autonomic nerves.

As to whether in cases such as the present one the afferent or efferent fibres of the pneumogastric are chiefly affected is unknown.

We wish to thank Sir James Purves-Stewart and Mr. William Turner for permission to publish the case. To Dr. Braxton Hicks we are indebted for the histological findings, and to Dr. David de Souza for much helpful advice.

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## THE BARIUM ENEMA IN THE DIAGNOSIS OF INTUSSUSCEPTION

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The object of this short communication is to remind those engaged in the active treatment of acute abdominal lesions that the barium enema is of value in the diagnosis of doubtful cases of intussusception in infants. It is not claimed that the method is new, for papers have been published on the subject on the continent and in America as far back at least as 1913,[1] and while I was preparing these notes an example was published by Dr. Reginald Miller.[2] The text-book

[1] Snow, I. M.: Amer. Jour. Dis. Child., 1913, vi., 93.
[2] Arch. Dis. Child., August, 1932, p. 201.

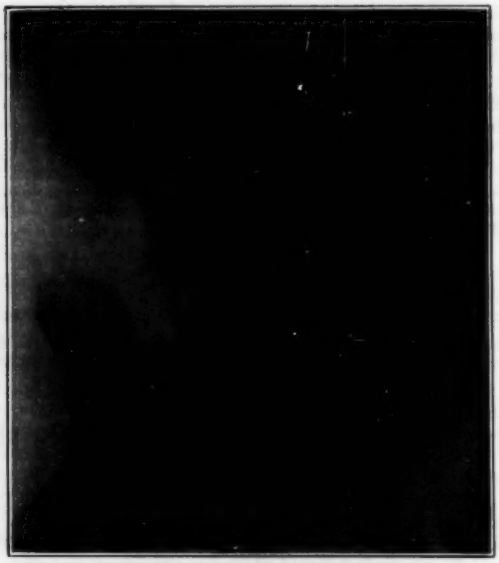
case of intussusception in an infant can be diagnosed with ease by the ordinary clinical methods of examination; but there are cases, usually of the subacute variety, in which diagnosis is not so simple. There is usually sufficient evidence to put the patient under suspicion, but insufficient to warrant an exploratory laparotomy. It is in these that the assistance of the barium enema settles the matter, as shown by the two cases described here. In advocating this additional diagnostic procedure, it is fully realised that it can only be carried out when working under ideal conditions. A competent radiologist with his X ray plant is required, and this usually means that the patient must be in a large hospital at a reasonable time of day.

CASE 1.—Girl aged 2 years. First child; breast-fed. She was admitted on Feb. 2nd, 1930, with four days' intermittent attacks of colicky abdominal pain. There was no vomiting, and the bowels had been opened once, but the motion contained no blood or mucus. The child looked well, and on examination of the abdomen a tumour was felt just above the umbilicus. This, however, disappeared shortly after examination. On the following day, as the diagnosis was still in some doubt, a barium enema was given and the X ray taken by Dr. Geoffrey Fildes. This revealed the presence of an intussusception with the apex in the transverse colon (Fig. 1).

Laparotomy was performed immediately and the intussusception found almost reduced, presumably by the enema. Reduction was completed in the act of withdrawing the cæcum from the abdomen. It was of the ileocolic type. The patient made a good recovery.

CASE 2.—Boy aged 6 months. Admitted on August 10th, 1932. He was a first-born and breast-fed. Two days prior

FIG. 1



Intussusception in the proximal half of the transverse colon.

to admission the mother noticed that he was disinclined to take his feeds, and commenced to vomit. This was shortly followed by attacks of screaming. The bowels were opened the day before admission by means of castor oil, and no blood or mucus was then noticed by the mother. The child on examination appeared perfectly normal and healthy, except that a movable tumour could be felt just to the left of the umbilicus. The tip of the finger, after being inserted high into the rectum, was smeared by a little dark-coloured blood. Barium enema radiography was carried out by Dr. Bertram Shires, and this showed an intussusception, which had reached the left half of the transverse colon (Fig. 2). Operation was performed immediately and the intussusception reduced. It originated from the outer and lower part of the caput cæci. Recovery was uneventful.

The X ray appearances are characteristic, for the barium can be seen insinuating itself between the intussuscipiens and the intussusceptum, and also outlining the mucosal folds resulting from the con-

FIG. 2

Intussusception in the distal half of the transverse colon.

certina-like effect of the intussusception on the bowel. The position of the apex is also indicated at the time the picture is taken, but it must be remembered that the enema may in part reduce the intussusception, as in Case 1. This partial reduction should not be a temptation to postpone operation on the grounds that total reduction may occur.

As the opaque enema is a comparatively simple procedure, and the effect on the child merely that of discomfort, it seems reasonable to consider its use in doubtful and subacute cases, for the additional evidence obtained makes the diagnosis conclusive.

I am indebted to Sir Percy Sargent and Dr. R. C. Jewesbury for permission to publish the notes of these two cases.

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SALFORD ROYAL HOSPITAL.—The annual report calls attention to a serious lack of adequate accommodation at this institution, to a great extent in consequence of "the rapid growth of specialised medical science." Plans for improvements have been prepared, but cannot be carried out for lack of means, and in the meantime an adjoining building is being temporarily taken over. The report of the medical board states there is still a good deal of unavoidable waiting for admission, particularly on the surgical side. The large number of industrial accidents and the increasing number of motor injuries occupy many beds which would otherwise be available for general surgical work. There is great difficulty, with the present inadequate out-patient accommodation, in dealing with the increasing number of patients who attend this department. It is added that of all the large hospitals in Manchester "the pathological department is the worst equipped." Notwithstanding these difficulties an out-patient clinic for cases of early mental disorder has been established under the Mental Treatment Act in collaboration with the Lancashire mental hospitals board. Dr. A. Corsar Sturrock, who has retired from the active staff of the hospital, is taking charge of the clinic.

# MEDICAL SOCIETIES

## ROYAL SOCIETY OF MEDICINE

### SECTIONS OF SURGERY AND MEDICINE

AT a joint meeting of these sections on Nov. 2nd the chair was taken by Mr. HUGH LETT, President of the Section of Surgery, and a discussion on the

### Treatment of Acute Appendicitis

was opened by Dr. J. A. RYLE. This problem, he said, was really a complex problem in judgment; it could not be decided by statistics or opinion, but only by a pooling of experience and careful analysis of clinical records and of the factors contributing to success and failure. The cultivation of judgment in modern medicine, however, had not proceeded pari passu with the cultivation of technique. Decisions might be warped as well as expedited by the knowledge that inaction might cause disaster. If Sir James Berry's address on Fallen Idols [1] had done no more than arouse thought and controversy, it had been valuable. A bare diagnosis of appendicitis was not enough; the stage and type of the pathological process must be visualised. There could be no antagonism between the medical and the surgical mind, and there could be no "always"; a best procedure for each contingency must be discoverable. Physicians tended too readily to visualise the worst and to be too vague in their images of what was happening. They saw to-day far fewer cases of acute appendicitis than the surgeon, but more often the "problem" case or the complicated case. Some surgeons of to-day stood in need of the "physicianary" qualities of an earlier age. Collaborations between surgical and medical minds were too rare in these rushed days. There was need for medico-chirurgical team-work.

Both personal experience and hospital figures suggested that the outstanding cause of mortality was still delay in diagnosis, while the most dangerous type and the type most often and easily missed was Wilkie's obstructive type. If there was obstruction there should always be immediate operation. It was characterised by pain, continuous or at first colicky, but always severe, and not accompanied by inflammatory symptoms such as pyrexia, increased pulse-rate, or rigidity. Surgical interference was not an appreciable cause of mortality. In the inflammatory type delay and medical treatment might be justifiable; interference in the "middle" period might be dangerous and cause spread of infection or ileus. The most difficult decision arose in cases first seen with symptoms of ileus or obstruction; in these cases especially, collaboration between physician and surgeon was desirable. Sometimes the patient might be tided over for a few days by medical measures, until greater localisation was obtained and operation became less risky.

The delay in diagnosis might be due to unwisdom of the patient, the parent, the schoolmaster or matron, the general practitioner or the surgeon. The chief thing to be desired of the general practitioner was greater knowledge of signs and symptoms and ability to recognise the obstructed type. Dr. Ryle's recommendations were as follows: (1) for the inflammatory case, the interval operation or—if operation were undesirable—a watching brief; (2) for circumscribed abscess, simple drainage at the most favourable moment, by the most favourable path and with the minimum of interference; (3) for the obstructive or gangrenous type, immediate operation; and (4) for the late case with distension and signs of obstruction, a consultation. The essential factors in the problem were alimentary rest for the patient and a mental picture of the pathology for the doctor.

[1] THE LANCET, 1932, i., 1027.

#### A SURGEON'S VIEW

Mr. H. H. RAYNER protested at the suggestion that surgery was making no progress in this disease. The statement was based on the Registrar-General's return: that there had been a steady mortality-rate for the last 20 years. In fact, however, case-mortality had been more than halved in the last 20 years; the figures were not accounted for by increasing operation on mild cases which had previously recovered under medical treatment. There had been a remarkable increase in the number of cases, and the improvement in the operation figure was due to earlier and better diagnosis. The proportion of operations in the first 24 hours had increased considerably.

The terms "early" and "unperforated" appendix were not synonymous, but the proportion of unperforated appendices removed could only be raised by insisting on the need for early operation. An appendix might perforate at any time in an attack—or never. The mortality of removal of the unperforated appendix did not exceed 1 per cent.; it was therefore obviously the duty of the surgeon to urge immediate operation in all cases. To secure early and accurate diagnosis, the clinical features at the onset must be recognised. In practice the fundamental question was: Has this patient got acute appendicitis or not? This was more important than: Has this patient got an obstructive appendicitis or not? The doctor should not attempt to discriminate degrees of severity in the ordinary case. Many patients did not seek medical advice for two or three days, and a serious result might follow the lack of rest and unsuitable diet. The pain was often mild for the first day or so. The most difficult type of appendix to diagnose was the pelvic type, for there might be no physical signs except per rectum. The public—especially those in charge of children—needed some knowledge of early symptoms. Early operation under proper conditions reduced the risk of death from 14 per cent. to 1 per cent., greatly reduced morbidity, and obviated the risk of recurrence. "Proper conditions" included a suitable state of the patient; contra-indications were: senility, excessive stoutness, cardiovascular abnormalities, and severe arthritis. On the third day and afterwards there were grounds for prognosis and estimate of the pathological state. Patients seen for the first time at this stage were in a different class from those seen earlier. There were three types: the subsiding; those with localised peritonitis; and those with widespread peritonitis. Operation should be performed at once on patients with general peritonitis. About half the cases with localised peritonitis would settle down, but cases not operated on must be watched carefully, as they might deteriorate and lose their chance. Those who did not settle down might develop abscess. The following types were suitable for expectant treatment: (1) those in which muscular rigidity was localised to a comparatively small area of the abdominal wall; (2) those in which there was a palpable mass—if this subsequently became an abscess the patient did better after a later drainage

operation than after an operation on an early abscess with a friable appendix at its centre. The indications for immediate operation were: (1) history of recent severe exacerbation of pain; (2) presence of marked acute tenderness; (3) evidence of toxæmia in the facies, pulse-rate, and temperature. The clinical and pathological features were the foundation of treatment.

The anæsthetic for toxæmic patients should be spinal or gas and oxygen; the additional toxic effect of ether was enough to turn the scale against the patient.

DISCUSSION

Dr. H. MORLEY FLETCHER agreed with both the openers. He found it difficult to interpret the contradictory statistics and suggested that a great many appendicectomies were performed in diseases (such as typhoid fever) for which the appendix was not responsible. There had been a great fall in the number of operations during the war period. One point should be strongly emphasised: operation should always be immediate in children. The ileocæcal glands should be examined, as sometimes they were acutely inflamed although the appendix was healthy. If inflamed they should be removed, to avert possible tuberculous peritonitis later. If the patient was seen on the third day and seemed quiescent, the starvation and bowel rest régime should be maintained.

Mr. R. DAVIES-COLLEY doubted if anyone would question the value of operation within the first 24 hours. In the middle stage there seemed to be a tendency to teach that the right routine was to watch, and only operate if things were going wrong; that even an abscess should be allowed almost to point through the skin before interference. He was strongly opposed to delay in that stage unless operation was definitely contra-indicated. Mortality in his opinion was not due to bad choice of a time but to bad technique. There was no great risk in operating on early spreading peritonitis, and the physical signs in these cases were very anomalous. One possible cause of death was faulty diagnosis. Appendicitis was three times less common in women than in men, but women figured quite largely in the Registrar-General's figures. Operation in the acute phase of salpingitis was well known to be dangerous. If there was any real doubt of the diagnosis it was better to wait and watch.

Dr. LEONARD FINDLAY was quite unable to reconcile the physician and the surgeon on this subject. What was wanted was not so much "judgment" as the ability to make a diagnosis. Whenever the diagnosis was made, operation should be performed. He had never regretted the ruling of immediate operation—at any rate in children. Surgeons did not sufficiently often ask the physician to help in diagnosis. Cases of pyelonephritis, cystitis, and lobar pneumonia had all been operated on for appendicitis. It was a good rule to say: If you can't find anything and you suspect appendicitis, behave as if it were appendicitis. He had seen several severe cases of delayed anæsthetic poisoning after up-to-date ether anæsthesia.

Mr. JOHN MORLEY thought that it was not sufficiently realised that in the very early hours of the attack the localised tenderness and rigidity were often quite absent and examination revealed nothing. The patient simply complained of diffuse colicky pain in the upper abdomen. Occasionally Wilkie's fulminating peritonitis was seen, but Wilkie seemed to suggest that early cases could be divided into inflammatory and obstructive types. Mr. Morley, however, thought that a large majority of cases were obstructive, but that cases varied very much in the speed of progress. There was no means of telling which would be fulminating and which benign. A good deal depended on the position of the perforation; some of the worst were at the base of the appendix, allowing gas and fæcal contents to leak from the cæcum. Another factor was the position of the appendix; the pelvic appendix was sinister. The old teaching on cutaneous hyperæsthesia had, he was glad to gather, been dropped. Spinal anæsthesia was very much safer than general; the surgeon could operate with much less trauma to the patient and much greater ease to himself.

Mr. A. J. WALTON thought there were three distinct pathological types: (1) Wilkie's; (2) one in which the infection began as a colitis and localised in the appendix; and (3) a hæmatogenous type, as seen after influenza epidemics. Clinically, however, it was often quite impossible to distinguish the types, and there was no value in attempting to recognise them. Statistics were valueless. The real problem was the third-day appendix. No good could be gained by leaving a diffuse peritonitis; such a case must be drained. Nor was it any use leaving a gangrenous appendix. He did not believe there was such a thing as a "subsiding" appendix; it might perforate at any time. There was a danger of spreading infection from a localised abscess, but technique should overcome this. The interim operation had a high mortality; there might be dense adhesions and a caseous mass inside. Thus, he advised urgent operation in all cases. The one exception was the very fat patient, and that was the danger of any operation and not of appendicectomy. To do the greatest amount of good to the greatest number of patients there was only one rule: operate as soon as you can.

Mr. HERBERT BROWN stressed a risk of operating on an apparently simple abscess in the middle of the first week; until the end of the first week there was no general immunity, and swabbing the cavity might disturb the protecting lymph layer, causing fatal septicæmia. In no circumstances, he thought, should an abscess cavity be manipulated before the end of the first week. The only treatment for the septicæmia would be intravenous mercurochrome. The only septicæmia he had seen in an "early" case (more than 24 but less than 48 hours) had followed a perforation at the base, which had been crushed, thus driving organisms into the blood.

Mr. J. B. HUNTER argued for immediate operation. At University College Hospital, he said, where all cases were operated on immediately they were diagnosed, the total mortality had been about 3 per cent. In children the necessity was urgent. The mortality-rate over the age of 10 was about 2 per cent., and under that age about 8 per cent. Nobody could tell what was happening in an abdomen.

Mr. ZACHARY COPE was certain that there were cases in which it was better to wait. If the appendix was known to have perforated and there was a lump, the resistances of the patient were combating it, and if the lump steadily became smaller the result of operation would be better after a few days' semi-starvation and rectal fluids, when the pus was thicker. Delay was also helpful for generalised peritonitis, as a limited operation might become possible. Ileus with a rapid pulse should also be treated expectantly, with gas gangrene serum. To say that operation should always be performed at once was to allow the clinician no judgment at all. Typhoid might be

very difficult to diagnose in children; he had seen a true ulcerative appendicitis in typhoid fever.

The PRESIDENT recalled the discussion on this subject at the Medico-Chirurgical Society in 1905, when the mortality had been enormous: 75 per cent. for peritonitis. At the London Hospital only 6 per cent. of the cases operated on had not been complicated by abscess or peritonitis. In 1912–13 the figure had been more like 54 per cent. The mortality-rate was 4·3 per cent. in the later series, whereas in the original series it had been 24 per cent. In the old days the Trendelenburg position had been the rule for all abdominal operations, and the saline treatment had not been introduced. Very great judgment was called for in the third to fifth-day cases; when in doubt he thought it better to operate. It was not wise to broadcast any advice to delay, as the surgeons with smaller experience throughout the country might tend to delay in those cases in which operation was essential.

Dr. RYLE, in reply, said that no broad basis of agreement had been reached. If Mr. Walton's doctrine were broadcast it would be as productive of disaster as Sir James Berry's. Surgical skill throughout the country was not uniform. The decision had to be made in the individual case every time. Judgment could be cultivated and trained. Any extreme would be bad as a general doctrine for the profession.

Mr. RAYNER confirmed Dr. Ryle's concluding words, and disagreed with Mr. Walton. The surgeon should not be stampeded into unnecessary or premature operation because he could not tell what was going on inside the abdomen. A maintained high temperature suggested gangrene however well the patient might feel, and there was always some such indication. A subsiding appendix was one that was rapidly approximating to normal, and the surgeon surely had an idea of the normal abdomen. He had not found any risk in the interval operation. The longer the case took to subside, the longer should operation be delayed; at least two months should always elapse.

## SECTION OF PSYCHIATRY

A MEETING of this section was held on Nov. 8th, when Dr. H. DEVINE gave his presidential address on the

### Problem of Schizophrenia

He said that although much important psychological, biological, and clinical research has been carried out on schizophrenic patients, we are still not in a position to state in a few words why these patients are ill, or how to cure them. Recent statistical studies of the results of various forms of active treatment had shown that the remission-rate among treated cases does not differ materially from that among untreated cases. To the psychiatrist whose work is confined to mental hospitals the dementia præcox problem was a very real one, since a large majority of his confirmed cases were schizophrenics. The picture of regression presented by such patients was peculiar. They lived in a world of their own, shunned social contacts, were indifferent to their environment, comfort, or appearance; they exhibited curious mannerisms; many had to be washed, dressed, and fed, and were it not for nursing care they would cease to exist. They lived in a state of spiritual isolation from their fellows; wealth, success, knowledge, culture, and even love, meant nothing to them. In spite of outward appearances these patients were not devoid of an inner psychic life. Observation of advanced schizophrenics had shown them to be aware of their surroundings and they all had the capacity for remembering past events. A katatonic and inaccessible patient might suddenly exhibit a change of phase and loquaciously poor out a stream of delusional talk, revealing thus an unsuspected richness of inner experiences.

In dealing with such non-coöperative patients the psychiatrist was at a disadvantage, for the patient's delusional outlook was so remote from normal thought that there could be no mutual understanding between doctor and patient such as obtained in other kinds of illness. The morbid thoughts which surged into the patient's consciousness, and which he expressed in symbols, described experiences which struck no emotional chords, because the listener was unable to draw upon anything within the range of his waking experience which was commensurate with that of the patient.

But a normal person had experiences when asleep which might enable him to understand in some measure the phenomenal world of the schizophrenic. Jung suggested that if the dreamer should go about performing actions we should have the clinical picture of dementia præcox. Perhaps even more allied to schizophrenic experiences were these temporary psychoses to which we all might be subject under the influence of various kinds of physiological stress.

Schizophrenia was not a rigid disease entity of known causation and of more or less uniform course and outcome. It would seem permissible to take the view that given certain conditions everyone is liable to exhibit schizophrenic reactions.

#### INNER LIFE OF THE SCHIZOPHRENIC

The cognitive, sensational, and intellectualistic schools of psychology provided us with no knowledge of human nature. Similarly, the idea so dear to Kraepelin, Nissl, and Alzheimer that the primary object of scientific psychiatry should be the study of the cellular modifications of the cerebral cortex, and their relationship to the symptoms manifested during life, did nothing to enable us to understand our psychotic patients as suffering and bewildered personalities. It was only when Freud and Jung began to seek for the origin of the phantasies of the neurotic and the insane in the unconscious biological tendencies, and the pathologist began to investigate the internal secretions and the physiological behaviour generally of these patients, that we were able to gain some understanding of the why and wherefor of their symptoms. It was not difficult to see in certain psychoses the happy realisation of desires that had never been adequately satisfied. Wish-fulfilment mechanisms were quite frequent in benign psychotic conditions.

Dr. Devine described various patients whose morbid psychic productions were of the non-logical autistic type, and who showed a symptomatology which bore a striking resemblance to that of certain myths and fairy stories: the magic key which opens the door to the secrets of life; the transformation of a weakling into a "Samson" with supernatural strength; an elaborate revival of the foster-parent phantasy; and the magical change of human beings into malignant insects. The cases showed the curious duality of the psychic life that was so universally observed in schizophrenic patients. On the one hand was the phantasy life; on the other, the normal personality with its memories intact and with a rational understanding of things in general. Another interesting feature of these cases was the relative coherence of the phenomenal

experiences which surged into consciousness, in contrast with the fragmentary psychic productions in acute manic psychosis. The patient who observed that his visions were so vivid and real that it was just as if he were at the cinematograph aptly described the state of affairs in some cases. The phantasies of the schizophrenic are essentially dynamic and alive. They expand, grow, and elaborate themselves. The plot thickens and becomes more and more involved; and the players become more numerous. These generalisations in regard to the inner life of the schizophrenic might only be true for a certain number of cases, since "schizophrenia" and "dementia præcox" were wide terms, but Dr. Devine took the view that the inner life of the schizophrenic, even in long-standing cases, was often much richer than it would appear to be on the surface. He had made prolonged studies of individual cases to discover the drama which lay behind the mannerisms, neologisms, and fragmentary references made to "voices" and delusions. He held that a fundamental reason for the apparent incoherency of the psychic productions in many of our patients was that we are here dealing with affectively determined symbolic thought processes, the meaning of which could not be coherently stated by the patient. Though he did not hold any particular theory of dream psychology, he said, it was obvious that these psychic states must have a history (Freud), must have a bearing on current conflicts (Rivers), and, like all mental processes, they must reach out into the future (Jung). On the surface, the psychotic content in these cases exemplified the view of Rivers that a dream is the solution or attempted solution of an existing conflict. However this might be, it was evident that the psychotic content in these cases was symbolic in character. As the external world was shut off, the imagery, as in dreams, was naturally visual; there was, as it were, a silent interchange of thought without the use of verbal symbols.

Dr. Devine regretted the dearth of clinical investigation on the content of the psychoses, such as those of August Hoch. Hoch had shown that while an outside view of dementia præcox revealed an arbitrary array of manifestations, of delusions, hallucinations, queer notions, and an emotional condition often out of harmony with what the patient said, peculiar incoherent utterances, and bizarre acts—an analysis often showed that all these experiences mean something to the patient, that certain mechanisms are at work, and that there is, in these manifestations, a certain limitation to definite trends. The scattered and fragmentary speech gave an impression of incoherence because the connecting links were hidden from the observer.

Psychologically the consciousness of the schizophrenic was fuller than normal consciousness. The source of the psychotic symbolism was to be located in the conative-affective tendencies, the intellectual functions of many schizophrenics being remarkably unaffected. The development of definite psychotic material sometimes led to a cessation of tension, and was associated with a feeling of tranquillity and certainty such as the patient had not hitherto experienced. A study of the past history of these cases created the impression that the whole life had been emerging to its solution in the psychosis in an inevitable kind of way. When the delusion emerged doubt and uncertainty were dispelled; and as the patient looked back on his past life he felt that his delusion explained all to him that had been mysterious and strange. Evidently in some cases the psychosis expressed some fundamental need.

Schizophrenia was aptly described as a biogenetic psychosis, since its symptoms were manifested, not primarily in deterioration of the intellectual functions, but in disorders of the vital tendencies that were shared in common with all living creatures from the amœba upwards. In Dr. Devine's view, the importance of Freud's contribution to general psychiatry could be summed up in the fact that he deflected our attention from somewhat fruitless researches on the histology of the brain in this disease, which it was assumed would reveal its nature, and directed our attention to the organism itself and its biological cravings.

### SCHIZOPHRENIA AS A HISTORICAL PROCESS

The psychiatrist saw the psychosis as the culmination of a series of events and processes, recent and remote, individual and racial, that had left behind indelible impressions upon the organism and were, indeed, part of its being. The psychosis could indeed only be interpreted as a historical process. The family traits, taints, indiscretions, illnesses; the psychic type; the endocrine pattern; the physique, organ inferiorities, dysplasias; the temperament; the tendency to pronounced fluctuations in the rhythm of the psychic processes—all these inborn peculiarities that not only predispose to a psychosis, but also determine its form and type, constituted the *hereditary unconscious*. The prenatal influences; the manner of birth; the family environment; the conditioning of the sexual life; the stresses, failures, life-wounds; the development of "faulty habits of reaction"; the bodily health—infections, septic foci, illnesses, unwise modes of living—all these factors which are liable to exert a baneful influence upon the psychic development constituted the *personal unconscious*. Thus historical events, both ancestral and personal, were condensed into the present and constituted the unconscious determinants of a psychosis. These unconscious determinants could be observed from the physiological standpoint.

Though no specific pathology of the disorder had been elucidated, the fact that it showed a prediction for the offspring of "tainted" heredity and of special constitutional types, could only mean that one or more physical "susceptibility" factors were in operation. One could assume that the concomitant metabolic peculiarities which had been discovered were significant of the physiological processes. It would seem probable that the reactions deviating from the normal had as their basis disturbances of one or more of the fundamental biochemical reactions of body, and especially of the central nervous system itself—changes, for instance, in tissue respiration and metabolism.

In the study of the problem which schizophrenia presents it was essential that we should cease to think of mind and body, but only of the living being and life. The problems of psychiatry were too deeply involved with disturbances of the physiological behaviour to enhance a purely psychological theory of the unconscious. For the psychiatrist the "unconscious" must include all the morbid processes, sequences, and changes revealed by objective methods of study, whether they be biochemical, histological, or psychological. The whole resources of medicine were required to solve the obscure problem of schizophrenia.

### RECENT DEVELOPMENTS IN TREATMENT

In concluding his address, Dr. Devine referred to recent developments in the treatment of schizophrenia by pyrexial or shock therapy, which had met with some degree of success; by stimulation of the respiratory

centre by intravenous injection of sodium cyanide; by cerebral stimulation produced by a mixture of carbon dioxide and oxygen. The most favourable and striking results from cerebral stimulation occurred in those patients who had been mute and inaccessible for long periods of time. A number of patients carried on conversations; one was markedly facetious and made remarks typical of talkative hebephrenic dementia præcox. Some of the patients appeared frightened when cerebral stimulation developed, but became calm and at ease when efforts were made to reassure them. The cerebral stimulation, as evidenced by free muscular movements, animated features, and ability to carry on a conversation and carry out requests, lasted from 2 to 25 minutes. After a variable period, the retrogressive changes began. Gradually, the voice became less audible; the response to questions became halting with long lapses; the facial expression became set; eye movements ceased; and attention could no longer be obtained. The muscular rigidity recurred, and in the course of two or three minutes the patient lapsed into his former state of mutism, negativism, and inaccessibility. Another recent method of treatment was the induction of a profound narcosis by injection of sodium amytal. Bleckwenn and others had obtained good results with intravenous injection of from grs. 10 to 15 of the drug, followed by daily intramuscular injections. Some patients awoke from the sleep thus induced in a more or less normal mental state, and remained so for a time, sometimes from 5 to 15 hours a day, during which they took their food, though having previously been negativistic and artificially fed. In the lucid intervals it had been found possible to elicit information from the patients which might have some bearing on the development of the psychosis.

Mlle. C. Pascal and her co-workers were also utilising chemical methods of stimulation in schizophrenic patients, using what she termed the "psychoanalytical pharmaco-dynamic" method. A variety of chemical stimulants were employed, either alone or in combination. These included: ether (inhalation); chloral hydrate of cocaine; sulphate of strychnine; hashish; mescaline; and nitrous oxide (inhalation). In certain cases music and songs had been utilised to amplify the psychosensorial excitation. When the stimulation was successful in breaking down the barrier of negativism, especially the mutism, an attempt was made to explore the psychic life and to penetrate the autism. The "analysis" was not strictly in accordance with the technique of psychoanalysis. The investigation was carried out by conversations patiently and firmly directed; association with dynamogenic words; the stimulation of emotional experiences by the presentation of such objects as photographs and letters; and sometimes by the evocation of traumatic experiences which stimulated strong affective reactions. No attempt was made to interpret symbols; this exploration of the psychic content was only intended to afford clinical information in a manner as objective as possible. In those patients in whom stimulation was successful it produced an altogether new psychic level. The most negativistic patients changed their affective attitude; they became amiable and polite, and the barrier of mutism and hostility fell like a mask. After the stimulant ceased to operate it had been possible in some patients to follow the psychic rhythm; the effort to maintain a state of equilibrium, the partial or complete check to reintegration, and the progressive or abrupt return to disintegration.

Though investigations such as these did something to satisfy the therapeutic impulse, their purpose was primarily intended to give precision to diagnosis and prognosis. The chemical stimulants serve to dissociate the reversible or functional lesions from those which are irreversible or structural. They reveal the dynamic possibilities of the schizophrenic patient, and separated the elements which are modifiable and unstable from those which are static and immovable. It was found possible to divide the patients treated by the pharmaco-dynamic method into five categories. Highest in the scale were the dynamic group with prevalence of reversible lesions; and lowest in the scale were the deficiency group with unmodifiable lesions. Between these groups were patients who exhibited, in varying degrees, the phenomena of life and death, the fragments of wealth and of destitution.

Though these researches were interesting and important, it could not be claimed that any notable advances in the treatment of schizophrenia had been achieved. Nearly 30 years ago Dromard had observed: "The precocious dement is a rich man whose capital is immobilised. Later he becomes a pauper." If this aphorism expressed a truth, and up to a point Dr. Devine believed that it did, it served to emphasise the urgent need of treatment and investigation in the very early stages of schizophrenia.

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## SECTION OF OTOLOGY

AT a meeting of this section on Nov. 4th, with Mr. J. F. O'MALLEY, the President, in the chair, a discussion took place on the

### Treatment of Lateral Sinus Thrombosis

Mr. E. A. PETERS, in opening, reminded his hearers that the sigmoid sinus and the superior and inferior petrosal sinuses formed a triangle which drained the blood from the petrous bone. Following mastoid sepsis, small vessels might thrombose, and the clot might extend to the sinus and its connexions, causing a fatal diffluent thrombosis. Or the organisms from this zone—usually the hæmolytic streptococcus—might enter the blood stream and produce a bacteræmia, or, later, a septicæmia. There was the possibility, also, of the formation of a mural or parietal clot due to the sinus being surrounded by infected bone or by a perisinous abscess under pressure. Thrombosis due to endothelial inflammation from within was responsible for a more chronic form.

The common post-operative thrombosis of general surgery gave opportunities for prophylactic treatment, but that was not so in the acute cases under consideration. The mainstay in aural cases was incision of the membrana tympani early, eradication of the septic focus, and serum treatment. Arbuthnot Lane, in 1888, was the first in this country to open the sigmoid sinus. He emptied the sinus until he came to healthy clot, and then ligatured the internal jugular. The child recovered. The first to deal with the jugular bulb in a drastic manner was Grunert.

The primary and most important step in treatment was the eradication of the septic otitis. In all cases of acute mastoiditis the dura mater and lateral sinus should be exposed. In the presence of discoloration of the transparent blue wall, or a lack of pulsation, or the presence of clinical signs, the cavity should be mopped out with hot hydrogen peroxide, and needle puncture should be carried out. Where there was evident clotting the vein was excised and "bipp" on a plug was passed down to the bulb, but not

tightly packed. This limited infection from the diseased area and prevented bleeding.

In the chronic mural cases the central part of the clot broke down into an abscess, and the latter ulcerated through the walls of the vein. Incision of this abscess and drainage should result in healing. When there was extensive clotting, the clot might extend down the internal jugular, and it was evidenced by swelling and tenderness along the vein, and a chain of swollen lymphatic glands. The veins in such a case must be exposed and excised.

In early cases of thrombosis of the lateral sinus the internal jugular vein was empty and collapsed, and it had the appearance of a white goose-quill. With the object of limiting infection along the inferior petrosal, the speaker packed gauze between the bone and dura mater, the latter being exposed by clearing away the cells anterior to the sigmoid sinus. It was dangerous to obliterate both lateral sinuses. Lymphatic isolation could be obtained by inserting gauze, where possible, between the infected bone and the dura mater. When an infected labyrinth endangered the meninges, this isolation could be carried to an extreme by separating the auditory and facial nerves from the internal auditory meatus—i.e., by inserting gauze and dissector between the bone and dura mater anterior to the sigmoid sinus after removing the sublabyrinthine cells.

Mr. W. F. WILSON (Newcastle) said that the treatment of septic thrombo-phlebitis of the lateral sinus and other complications of middle-ear suppuration had made great advances during the last 50 years. Zaufal had first suggested the operative treatment of sinus thrombosis in 1880. Nowadays, thanks to more exact knowledge of middle-ear disease and its complications, and thanks to post-graduate teaching, cases were treated in hospital without delay, and early treatment was found largely to obviate the grave complications. In lateral sinus thrombosis one was faced with not only an acute septic focus more or less completely walled in by a barrier of inflammatory tissue reacting to the infection, but an acute focus which had ingress to the whole systemic circulation via the internal jugular vein, superior vena cava, right heart, and lung. Therefore a very thorough mastoidectomy was called for, clearing out all septic bone and pus pockets, from the highest retrozygomatic gallery of cells to the tip of the mastoid below. Then the lateral sinus was laid bare by the careful use of chisel and gouge.

When there was doubt in the surgeon's mind as to whether the sinus was involved, the mastoid wound should be left wholly open, and a moist antiseptic dressing should be applied to the cavity to keep the skin margins apart, this being changed as often as necessary. This procedure not only permitted surface drainage but allowed of easy inspection of the wall, and, if need be, puncture or incision for diagnostic purposes. Where one could be fairly certain that the thrombosis was confined to a limited portion about the sigmoid area, many surgeons would be content to pack off the lower part of the sinus and clear out the clot until free bleeding took place, without tying the jugular vein. His own feeling was that ligation of the internal jugular vein should be done wherever the thrombus reached down to the bulb—whether the clot was mural or completely occluding—for otherwise disintegration of the thrombus might occur and cause a continued infection of the blood stream. Also, the vein should be tied in every case which presented active symptoms of pyæmia. According to many well-known otologists, both in this country and abroad, the complete operation on the bulb was as a rule unnecessary. It was a serious addition to the radical mastoid operation together with the clearing out of the sinus, and the facial nerve was frequently injured in the operation.

Mr. Wilson gave the results in 56 of his cases of lateral sinus thrombosis. A large proportion of his first group of 42 cases were admitted with a history of previous rigors, and with pyæmia or septicæmia. In the cases operated upon the usual procedure was to do an adequate mastoidectomy, with wide exposure of the sinus and a thorough clearance of the clot or other sinus contents, and the immediate control of bleeding by inserting "bipped" gauze between the sinus walls and the overlying bone, sometimes with ligation of the jugular vein. Of the 42 patients 22 recovered; in 5 there was no previous history of rigors. In a second group (14 cases) 9 were operated upon and all died; they were all very ill, and had either temporal lobe or cerebellar abscess, meningitis, and cavernous sinus thrombosis.

### DISCUSSION

The PRESIDENT said it was important to emphasise in future text-books and in other ways that when a case had reached the stage in which there was tenderness or swelling of the jugular vein, death was almost inevitable. He agreed with Mr. Wilson that ligation of the vein should be carried out when the clot lay very low in the lateral sinus, for a clot in that situation might not drain readily through the open sinus.

Dr. DAN MCKENZIE said that his own policy was as follows: in easy cases in which the clot was accessible and could be removed entire, or almost so, the vein was not tied; in a grave case the vein was tied. But the problem was a difficult one.

Sir JAMES DUNDAS-GRANT pointed out that Macewen had remarkably good results in these cases without ligation of the vein, and he was a pioneer. This ligation was more an episode than the most important part of the operation; the exposure and treatment of the sigmoid sinus was much more vital.

Mr. T. B. LAYTON agreed with both openers that the chief part of the treatment of this condition was the complete removal of the septic focus in the bulb overlying the sinus; but he did not agree with their approach to the subject. The proper approach, he contended, was from the standpoint that thrombosis was a physiological process whereby Nature strove to prevent the invasion of the blood stream from the overlying osteitis, the rigors being regarded as evidence of a sudden and rapid infection by many organisms. In the operation he considered it was necessary to expose all the area of dura which naked-eye inspection showed to be diseased, carrying on until around the granulation area there was an area of normal dura.

Mr. SYDNEY SCOTT spoke of the value of the Queckenstedt-Tobey test—i.e., the reading of the cerebro-spinal pressure after lumbar puncture—as a means of diagnosis of lateral sinus thrombosis.

Mr. W. S. THACKER-NEVILLE (Darlington) argued the necessity, when doing a paracentesis, of carrying out a culture, and if this was septic, of opening the sinus. It was an important factor in prevention of grave sequelæ. If the patient had a temperature and the fluid showed hæmolytic streptococci he always opened the sinus.

Dr. DOUGLAS GUTHRIE (Edinburgh) said that in 500 consecutive cases of otitis in children, there were 80 of acute mastoiditis and only 2 of sinus thrombosis. A variety which deserved greater attention was primary thrombosis of the bulb; there was not then a clot within the sinus, but it was lower in the bulb, the infection having taken place through

the floor of the tympanum. Cases of that kind were often diagnosed as aural bacteræmia. It should be widely known that mastoid tenderness might be absent in this disease; of the last ten cases of sinus thrombosis which he had seen only two showed mastoid tenderness.

Mr. F. HOLT DIGGLE (Manchester) said the vein was tied in fewer cases now than hitherto, because of treatment by sera and synthetic bactericides. It was not always necessary to expose the bulb, for it could be drained through a catheter whose end protruded from the neck. If a case was so severe as to require ligature, the vein should be tied at two points and the intervening portion should be removed.

Mr. ERIC WATSON-WILLIAMS (Bristol) said he could not see any objection to tying both jugular veins; he had several times done both within a week, and once he had tied them at the same sitting. Pulsation should be estimated by both view and touch; pulsation in a thrombosed sinus was more easily felt than seen, whereas in a sinus with blood in it, pulsation was more easily seen than felt.

## LIVERPOOL MEDICAL INSTITUTION

### Diabetic Lipæmia

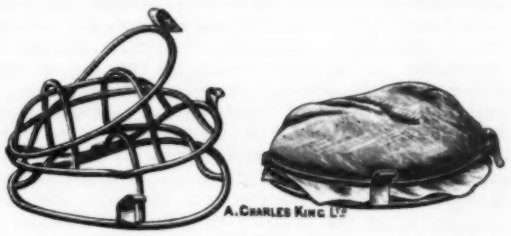
AT a meeting of this institution held on Oct. 27th, Prof. R. E. KELLY being in the chair, Dr. D. H. COLLINS summarised the clinical evidence of disordered fat-metabolism in diabetes, and discussed the types of lipoids in blood, and their relative significance in various conditions associated with high blood-fats. Evidence was given that diabetic lipæmia was endogenous in origin, as compared with the exogenous type following fat-feeding. Rückert's hæmolipokrit was described, and its reliability compared with the Schimidzu method of blood-fat estimation. The hæmolipokrit had the advantage of requiring neither special technique nor special apparatus, and only a small amount (0·15 c.cm.) of serum. Tables were shown giving the blood-fat readings taken by the hæmolipokrit in a series of cases. In 55 non-diabetics the average serum fats were 0·571 per cent. and in 103 diabetics under treatment, 0·818 per cent. There was an exaggeration of the lipæmia in cases with glycosuria, and a further increase in those with acetonuria. The following conclusions were reached: (1) that the more severe cases of diabetes as judged by other standards presented higher blood-fats; (2) that there was no parallelism between the variations of the sugar and of the fat content of the blood, and that the latter is more stable; and (3) that insulin when given in large amount decreased the blood-fat concentration. The opinions of other workers that a high fat content of the blood was of ill omen in diabetes was confirmed. A suggested explanation of the lipæmia in diabetes was that as the katabolism of carbohydrates was interfered with to a greater or less degree, so the mobilisation of fats was provoked in order to meet the calorific requirements of the body. Lipæmia was apparently a symptom of diabetes, which could be estimated and recorded, if additional guidance was required in diagnosis, prognosis, and treatment.

In the discussion which followed Dr. J. R. LOGAN said he had seen a case of fatal diabetic lipæmia in 1881, the first time the condition was diagnosed in the living. In this case, although there was an enormous amount of fat in the blood, the urgent symptoms terminating with coma had apparently only lasted about seven hours. How such a profound change could take place in so short a time was not easily explained even now.—Dr. E. CRONIN LOWE pointed out that there was a clinical value in knowing something more about fat metabolism in diabetes. Acetonuria, he said, was invariably associated with this increase in blood lipoids. Although in advanced cases, and those showing the presence of acetone in the urine, it would be of advantage to record any abnormal finding in the lipoid content of the blood, it was unlikely to be of clinical value in ordinary cases of diabetes.

## NEW INVENTIONS

### A MASK FOR USE WITH CHLOROFORM CAPSULES

CHLOROFORM capsules, as suggested by Mr. L. C. Rivett, have been used for some time in the second stage of labour at the Middlesex Hospital. The method of administration was to break one of the capsules, and to insert it into a Schimmelbusch mask in such a way that it lay between one of the cross-pieces of the mask and the lint covering. In practice this method has shown two drawbacks: (1) The chloroform evaporating in the intervals between the pains led to an uneconomic use of the capsules. (2) There was a danger of chloroform falling on to




the face. In order to obviate these defects a Bellamy Gardner mask has been modified so as to interpose a layer of lint between the capsule and the patient's face. This mask was chosen as it is better adapted to fit the face in preference to the Schimmelbusch, which was devised for open administration of chloroform by the drop method. A small wire frame was made to go inside the mask, hinged to it on one side with a clip fastener on to the other. The wires constituting the dome of the mask were slightly cranked in order to give half an inch of clearance over the inner frame at its highest point, leaving a chamber for the chloroform capsule. To make up the mask two pieces of lint are taken, 8 by 6 in. One is placed in the original frame of the mask, a chloroform capsule is put in the inverted frame and broken. The second layer of lint is placed over this and the small frame closed, thus enclosing the capsule.

Mr. Leslie Williams has suggested [1] that the method may lead to overdosage owing to too concentrated a vapour being used. If, however, the mask is removed at the end of each pain and a new capsule is not inserted until the administrator is satisfied by placing the mask over his/her face that the vapour has become weak, then such an accident is outside the range of possibility. The mask has been made for me by A. Charles King, of Devonshire-street, W.1. The chloroform capsules are manufactured by Martindale and Co.

L. H. LERMAN, M.R.C.S. Eng.,
Senior Resident Anæsthetist, Middlesex Hospital.

[1] THE LANCET, Oct. 8th, p. 804.

# REVIEWS AND NOTICES OF BOOKS

## Dorland's Medical Dictionary

*The American Illustrated Medical Dictionary.* Sixteenth edition. By W. A. NEWMAN DORLAND, M.D., F.A.C.S., with the collaboration of E. C. L. MILLER, M.D. London: W. B. Saunders Co., Ltd. 1932. Pp. 1493. 35*s.*; or with thumb index, 37*s.* 6*d.*

IN reviewing the fourteenth edition of this work five years ago we alluded to the tendency for a dictionary in later life to become an encyclopædia. We received the fifteenth edition but failed to review it, owing to a fruitless search for omissions of which only three ultimately came to light—namely, Higginson's syringe, prolan, and solipsism. One of these is made good in the sixteenth edition now before us which, we are told, contains several hundred new words, most of which appear for the first time in any dictionary. The encyclopædic tendency has now resulted in the inclusion of 279 portraits of men who have given their names to the terminology of medicine. These portraits, many of them borrowed from Garrison, constitute a gallery of the great physicians of the past. They are excellently reproduced, and there is no doubt that they do enhance the interest of the volume, especially for the odd moments when the reader idly turns over the pages. From the artistic point of view the portraits suffer from their proximity to pictures of monstrous fœtuses and patients suffering from unattractive diseases, but this perhaps is inevitable. If now converted to the use of text illustrations we are still sceptical of the value of such plates as that of biliary calculi (between pages 228 and 229) which fill so scantily two whole leaves of a book, otherwise a masterpiece of legible compression. In this edition the terminology of physical therapy has been brought into harmony with the suggestions of the Council on Physical Therapy of the American Medical Association, and the whole book has been through the hands of the staff of the Association under the direction of Dr. Morris Fishbein. It is now 32 years since Dorland's dictionary began to appear, and during this time the volume has continuously improved in appearance and in ease of reference.

## A Text-book of Pathology

*An Introduction to Medicine.* By WILLIAM BOYD, M.D., M.R.C.P. Edin., F.R.C.P. Lond., Professor of Pathology, University of Manitoba; Pathologist to the Winnipeg General Hospital. London: Henry Kimpton. 1932. Pp. 946. 45*s.*

THE medical student has already the choice of many excellent text-books of pathology, and the first reaction aroused by a new production is a guess as to its fate in competition with its established rivals. We predict that Prof. Boyd's text-book will enjoy a considerable degree of popularity, for it is a pleasantly written and readable work, is well illustrated, and covers the ground quite adequately. Its motive is the study of pathology in relation to the living patient, and it is intended to serve as an introduction to medicine and surgery. Wherever possible the author strives to correlate clinical symptoms with pathological lesions, and to this end in his description of the more important diseases an account of the lesions is preceded by a brief summary of the clinical symptoms, and followed by a discussion on the relation of symptoms to lesions.

The book is essentially a student's manual for, as Prof. Boyd points out in his preface, it is no longer possible to write a text-book for the student which shall at the same time serve as a book of reference for the working pathologist. Brevity and a somewhat dogmatic attitude are prime virtues in students' text-books, and Prof. Boyd has wisely resisted the temptation to discuss theories in too great detail. But brevity and dogmatism may be carried to excess, as they are occasionally here. For example, the section on pneumoconiosis is so brief as to be misleading, and the bald statement that acute diffuse glomerulo-nephritis is an indication of bacterial infection would be improved by a little elaboration. It was a pleasure to find on page 35 a warning against a teleological view of inflammation for, as the author says, "there is nothing transcendental about the process, which is governed by purely physico-chemical laws and must not be looked upon as purposive in nature." It was the more disappointing therefore to read on page 232 that "cancer is a process unlike any other biological process. All other processes are designed to an end. Growth, reproduction, inflammation, repair, all have meaning. Cancer apparently has none." But in the main Prof. Boyd follows his own counsel and avoids teleological argument. His teaching is sound and thoroughly up to date, and excellent descriptions of recent work, for example that on the origin of the melanomata, are included.

## 1. Mothercraft, Antenatal and Postnatal

By R. C. JEWESBURY, D.M. Oxf., F.R.C.P. Lond., Physician in Charge of the Children's Department, St. Thomas's Hospital; Hon. Medical Director to the Mothercraft Training Society. London: J. and A. Churchill. 1932. Pp. 178. 10*s.* 6*d.*

## 2. The Breast-fed Baby in General Practice

By LESLIE GEORGE HOUSDEN, M.B., B.S. Lond. London: H. K. Lewis and Co., Ltd. 1932. Pp. 118. 4*s.* 6*d.*

1. FEW pædiatricians could be better qualified than Dr. Jewesbury to write on the subject of infant feeding and management. This book represents the fruit of 25 years' experience of infant welfare work and of close association with the Mothercraft Training Society since its inception. Breast feeding, it need hardly be said, is strongly and consistently advocated, and full consideration is given to its establishment and maintenance. The principles of artificial feeding on the "percentage" system, initiated by Sir Frederick Truby King, of which the author has been the principal exponent in this country, are given in detail. This method, of which the aim is to keep constant the protein ratio (the percentage of calories derived from protein to those derived from fat and carbohydrate), and of limiting the total protein given to 1·6 per cent., involves a somewhat elaborate modification of cow's milk by dilution and addition of both fat and carbohydrate. Dr. Jewesbury recommends the use of lime water also in formulas made up with raw cow's milk. Whether this complexity of ritual is entirely necessary or even practicable in dealing with normal infants of the out-patient class is open to question, and there are those who will hardly agree with the author's emphatic statement that "protein indigestion is one of the commonest difficulties met with in bottle-fed babies." There is no question, however, that percentage feeding can, and does, give very satisfactory results, and if confirmation of this were needed it would be found in

several of the well-designed charts and diagrams with which the book is illustrated. In a final section the commoner disorders of infancy and early childhood are briefly considered. Dr. John Fairbairn contributes a chapter on the maternity aspects of mothercraft, which in 21 pages provides a summary of the subject that is a model of its kind; Prof. John Mellanby on the Physiology of Lactation is less happy, in that his contribution would be more suitably placed in a book intended for general physiologists than in one for infant welfare workers. In referring to the book as a whole, in the course of a recent article (THE LANCET, Oct. 1st, p. 745), we have commented on the meagre consideration given to the psychological aspects of mothercraft and the emotional relationship of mother and child. From the materialistic point of view we might add that the book would be of considerably greater value (especially to medical officers of infant welfare centres) if some space were allotted to the question of expense of the different feedings and articles of diet advocated. This might well take the place of the very detailed pages devoted to the immediate post-operative feeding of cases of pyloric stenosis, which in the great majority of cases is carried out in hospital. When these criticisms are made, however, the book remains one of real distinction and authority, which will be welcomed by all interested in the subject.

2. This small book contains the essay on Breast Feeding to which was awarded the Sir Charles Hastings Clinical Prize by the British Medical Association in 1932. The sentiments it expresses are unimpeachable. Dr. Housden rapidly convinces us that breast milk is the ideal food for babies, that infection is more liable to occur amongst the artificially fed, that an understanding of the normal baby is essential to a proper study of the art of medicine. From many of the case-histories and figures quoted, however, it is clear that even now this doctrine is not everywhere accepted, and we therefore hope the book will find its way to the unconverted. The technique of breast feeding and the commoner difficulties encountered are dealt with, and the book is profusely documented. We note that Dr. Housden believes in the hypodermic injection of expressed milk as a means of increasing breast secretion in difficult cases.

## Materialism

By J. S. HALDANE, Fellow of New College, Oxford; Honorary Professor, Birmingham University. London: Hodder and Stoughton, Ltd. 1932. Pp. 221. 3s. 6d.

Dr. Haldane has travelled a longish way in his philosophical pilgrimage since his Edinburgh days. He has not always been easy to follow; for by the time his readers had got some idea of what he meant in one of his books or essays he had moved further on himself and written another which did not say quite the same. But in the development of his faith there has been no inconsistency; its growth has been as coherent as his distinguished contributions to the details of physiology, and in this book of essays it seems to reach a mature expression which it has hardly achieved before, and a clarity in which some of his previous writings were, to some people, lacking. He began with the comparatively simple proposition that as a matter of experiment certain physiological processes, such as the uptake of oxygen by the blood, could not be explained, as some thought, by the known principles of chemistry and physics; this led to the argument that the working of the body cannot be dissected into its components because their sum is palpably less than the capacity of the whole organism; conscious behaviour is then brought into the field, and the something which is behind it, and finally the conclusion is reached, as a matter of experience, that the physical and spiritual worlds cannot be separated and that both find their reality in God—the "friend behind phenomena" of the Greek philosophers.

The eight essays of which the volume is made up were given as addresses on singularly diverse occasions—the opening of a medical school session, as president of the Institute of Mining Engineers, to the British Institute of Philosophical Studies, to the Liberal Jewish Synagogue, to the lunch-hour congregation at St. Martin's-in-the-Fields. The variety only emphasises his point that our experience is indivisible, and that all its items have a common background of spiritual reality. And thus Dr. Haldane moves, if we may say so, on to a level he has never reached before and preaches a religion of moving beauty and pursuasiveness, catholic in the widest sense. With theology and the systematics of organised religion he has little immediate concern; he indicates why he cannot give his personal adherence to any particularised creed or to any belief in a future life with rewards and penalties for what we do here. Let us realise, he says, that the physical world with which we are daily concerned, and about which it is so interesting and useful to find out all we can, is at best a very imperfect representation of reality. Those who have ears to hear will read the book with pleasure and advantage; those who have not will not understand what it is about, though even they will hardly grudge its modest price.

## Manuel pratique de dermatologie

By A. DESAUX and A. BOUTELIER. Paris: Masson et Cie. 1932. In 2 volumes. Pp. 1120. Fr.260.

THIS is a delightful book which presents dermatology in a comprehensive manner from the French angle. The authors belong to that famous St. Louis school which produced L. Brocq, Sabouraud, and Darrier, and others whose names stand for dermatological progress.

The first volume is divided into four parts. Part 1 gives general procedures, which include interrogation of the patient, examination of the stripped body in a good light, and a study of the elements of the eruption, its composition, and its localisation; these most useful "conseils" are followed by a brief section on the diagnosis of pruritus without visible cause. Ignoring for the moment Part 2, Part 3 deals also with diagnosis, that of the lesions presented, while the concluding section of the volume—Part 4—concerns itself with regional localisation and the assistance it can give to the investigator. The museum of the St. Louis Hospital supplies practically all the half-tone illustrations (none of them in colour), which greatly facilitate the study of Parts 3 and 4. They are numerous and exceedingly good, and the trained dermatologist will find many of them useful in comparing rarities of doubtful or differing nomenclature in the two languages. Coming to Part 2, this deals with the reactions of the skin, its anatomy and physiology (profusely illustrated by diagrams), its biochemistry, the mechanism of pigment formation, the immunising functions of the skin, the possibility of an internal secretion from it, its metabolism, the physiological connexions of the endocrine glands and the vegetative nervous system, and many other

considerations. A brief chapter on the common affections of the nail-bed and the pilosebaceous follicle are followed by a dissertation on the general principles of local treatment, rules, and the indications for hydro-, physio-, helio-, and electro-therapy. The authors have handled this chapter, as indeed they have the whole book, in a novel and stimulating way. The well-illustrated chapter on cosmetic surgery, which is perhaps more practised in Paris than elsewhere, is contributed by Pierre Brocq.

The second volume includes a description of the dermatoses—eczema and its numerous types, psoriasis, and the parakeratotic group. Then follows a chapter on the protozoal infections, including syphilis, which is very briefly discussed in comparison to other dermatological conditions. The mycological, superficial and deep, the microbial, and ultramicroscopic infections are then discussed, special attention being devoted to leprosy and tuberculosis of the skin, and finally—and this is an original feature—a 200-page illustrated "dictionary" of the dermatoses, classified in alphabetical order, and liberally annotated with diagnostic and therapeutic aids is supplied.

The industry, care, and knowledge that have been expended in the preparation, illustration, and the entirely novel arrangement of this excellent text-book deserve high commendation.

## A Text-book of Clinical Neurology

Second edition, revised. By ISRAEL S. WECHSLER, M.D., Professor of Clinical Neurology, Columbia University, Philadelphia. London: W. B. Saunders Co., Ltd. 1932. Pp. 759. 35*s*.

THIS work appeared originally five years ago, during which period some notable advances have been made in knowledge of the diseases of the nervous system. These have been incorporated by Prof. Wechsler in his second edition, which in several ways represents an improvement on its predecessor. The scientific caution of the writer is well exemplified by his brief critical review of such questions as the syndromes of the corpus striatum, the ætiology of the neuroses, or the relation of the endocrines to nervous function. On the other hand, as befits a book for students and practitioners, the presentation of the accepted facts of clinical neurology is dogmatic, descriptive, and concise. The illustrations are more or less uniformly good. Brief bibliographies are appended to each section.

## Technique of Ultra-violet Radiology

By D. T. HARRIS, M.B., B.S., D.Sc., F.Inst.P., Professor of Physiology, London Hospital Medical College. London: Blackie and Son. 1932. Pp. 166. 6*s*.

THIS small volume, one of Blackie's Technique Series, was designed by Dr. Harris to meet the needs of workers who wish to handle ultra-violet generators for any purpose. It fulfils a want, giving in clear concise form the laws governing radiation, absorption, generation of ultra-violet radiation by high-frequency oscillatory discharges, arc lamps, and mercury-vapour lamps. The methods used in detection and measurement of ultra-violet radiation are indicated. There is a useful chapter on spectrometry; others deal with thermal radiometers, photo-electric methods, and amplification. A short section on ultra-violet therapy contains in condensed form a wealth of useful information. The book is clearly illustrated, and contains useful diagrams and tables. It may be doubted, in spite of the suggestion printed on the loose cover, whether the book will prove of value to nurses, laboratory workers, and medical students. The subject matter precludes easy reading, and some knowledge of advanced physics is necessary if the reader is to follow Dr. Harris's account of the laws governing ultra-violet radiation.

The book will appeal, however, to the specialist, the research worker or technician, and to the bio-physicist, for the information it summarises is not easily accessible.

## Surgical Pathology of the Female Generative Organs

By ARTHUR E. HERTZLER, M.D., Professor of Surgery, University of Kansas. London: J. B. Lippincott. 1932. Pp. 346. 21*s*.

THIS monograph forms one of a series on the branches of surgical pathology; thus many of the topics are dealt with from the point of view of the general surgeon rather than of the gynæcologist, who will be disappointed by the lack of detail in certain places. The views expressed, however, are shrewd and sound. The condemnation of unnecessary operation and indiscriminate oöphorectomy is welcome, particularly when expressed with such vigour. The descriptions call for little criticism. A welcome innovation is the inclusion of an account of the pathology of retained products of conception in the section dealing with non-malignant diseases of the uterus. The references are derived almost entirely from American publications, and compare unfavourably as indications of important work with those usually supplied in modern text-books. The book is beautifully produced, and the illustrations are worth careful study, and surgeons who deal with all types of abdominal surgery will find it of considerable value, though it is hardly the exhaustive treatise on gynæcological pathology which such a controversial subject seems to demand.

## The Legal and Ethical Aspects of Medical Quackery

By LEONARD LE MARCHANT MINTY, Ph.D., B.Sc., LL.B. London: William Heinemann (Medical Books) Ltd. 1932. Pp. 262. 7*s*. 6*d*.

THIS is a valuable little book. It is written without exaggeration and the author's statements are supported by full reference to legal procedures and decisions, and publications in journals, lay and medical. The mere list of legal cases cited occupies some three pages, and in many cases the notes on what happened justify fully the author's statements. An introductory chapter on "Infamous Conduct in a Professional Respect" is a lucid description of a subject which is eternally puzzling to those who do not understand either the origin of the unfortunate phraseology or the dependent penal procedure. We wish that critics of the General Medical Council could read this chapter before making appearances in print. From the chapters on the herbalist, the bone-setter, and the osteopath, the reader should learn what chances these rivals to the trained medical man have of effecting anything which is beyond the powers of qualified medicine, while the risks to the public of confidence in the unqualified are set out. But there is no intolerance in the author's views, and in many places he recognises the value of the proceedings undertaken by unqualified persons, while they are working in a position ancillary to scientific medicine.

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# THE LANCET

*LONDON: SATURDAY, NOVEMBER 12, 1932*


## SERUM TREATMENT OF POLIOMYELITIS

LAST March we published a report by Dr. JEAN MACNAMARA and Dr. F. G. MORGAN on the serum treatment of poliomyelitis in Melbourne. The conclusion of this report was that the disease could often be diagnosed in its pre-paralytic stage and that "the use of human immune serum at this stage, in adequate dosage, has given excellent results as evidenced by a low mortality-rate, a low average total paralysis, and a strikingly low proportion of paralysis of the severer grades." These conclusions have been challenged on the ground that the controls provided were insufficient. About the same time S. D. KRAMER, W. L. AYCOCK, and their associates,[1] in the United States, described a series of 82 cases in which roughly half received serum in the pre-paralytic stage and no reason was found to suppose that it did any good. The same conclusion was reached in a large inquiry made in New York at the suggestion of Prof. W. H. PARK, whose results have already been summarised in THE LANCET (July 23rd, p. 186). It is agreed that the only way to prove the worth of the serum would be to treat alternate cases with it. This has not been done of late years, for the usual reason that believers in the remedy cannot see their way to withhold it. Attempts to provide controls in other ways are full of difficulties. For instance, a campaign in favour of early treatment by serum —such as the campaign in Melbourne—introduces a fallacy because it leads to the recognition of cases which would otherwise not have been diagnosed. A high proportion (variously estimated) of patients with poliomyelitis do not develop paralysis, whether treated or not. Under ordinary circumstances they are apt to escape diagnosis; but if a great effort is made to secure serum treatment of every patient most of these minor cases will be brought to hospital; and the end-results, on the average, will appear to be very much better than usual. The successes of MACNAMARA and MORGAN are criticised on these lines, and the general opinion at the annual meeting of the American Medical Association last summer was that the investigations of PARK, and of KRAMER and AYCOCK, more nearly approached a controlled experiment than any others so far made. The provisional conclusion was that further work should be done, but that nothing favourable has been proved. PARK[2] points out that poliomyelitis is a virus disease and that we have no knowledge of any such disease that can be benefited by an antiserum after clinical symptoms have developed. This does not, of course, mean that serum is inactive; indeed, in the valuable reference book[3] just issued under the auspices of the International Committee for the Study of Infantile Paralysis, of which Prof. PARK is chairman, evidence is given of the value of serum for the passive immunisation of children during an epidemic. But prophylactic and curative value are not synonymous, and we have the example of measles before us in which convalescent serum is a definite preventive in the early stages of the incubation period but is impotent after illness has begun.

The facts are thus sub judice; but many workers are convinced by their observations that serum is clinically useful in the pre-paralytic stage of poliomyelitis, and there is little reason to think it can be harmful if properly given. Hence there is naturally a demand both from medical practitioners and from the public for its administration in individual cases. In this country the treatment is in use in London County Council hospitals, at Oxford, at Manchester, and elsewhere. The Ministry of Health, we understand, are watching the results with close interest and an immunisation committee has been set up at the Ministry which keeps in close touch with this work and also with research which is in progress. In practice it should be realised that, on present evidence, treatment by convalescent human serum is only to be given in the pre-paralytic stage; according to most authorities it is of no avail when paralysis has once supervened. The clinical diagnosis should if possible be confirmed by an examination of the cerebro-spinal fluid made at the bedside without delay and the procedure described by MACNAMARA and MORGAN may here be followed with advantage. Although lumbar puncture, by itself, has often been recommended as useful in poliomyelitis there is now some reason to suppose that it may actually initiate involvement of the central nervous system by drainage of spinal fluid, through permitting readier penetration of the virus through the choroid plexus (J. E. GORDON). Hence some hold it unwise to remove cerebro-spinal fluid and to delay the administration of serum while that fluid is sent away for examination—as was done in the New York investigation. For diagnostic purposes, however, 5 c.cm. of cerebro-spinal fluid suffices and the examination can be carried out quickly if the microscope and counting-chamber are ready for use before the lumbar puncture needle is inserted. By this means a second lumbar puncture may be avoided if intrathecal administration is employed.

The collection and preparation of serum requires special precautions and the supply from convalescents is necessarily limited. A recent study by MAURICE BRODIE[4] in Canada, however, confirms previous statements that serum of high antibody content may be found in urban adults who are not convalescent from the disease, and his figures suggest that serum from this source is

[1] New Eng. Jour. of Med., 1932, cevl., 432.
[2] Jour. Amer. Med. Assoc., Sept. 24th, p. 1050.
[3] Poliomyelitis. Williams and Wilkins Company, Baltimore, U.S.A. 1932. Pp. 562. $6.
[4] Jour. Exper. Med., Oct. 1, p. 507.

equally effective; certainly it is very much more easily obtainable and therefore should be cheaper. As regards technique, it is thought that the best clinical results are obtained by intrathecal and intravenous administration. The dosage is regulated by the age of the patient, but it is desirable to give as large a dose as possible; an average dose is 20 c.cm. of convalescent serum intrathecally with 30 c.cm. intravenously (R. W. FAIRBROTHER). If no sign of improvement is observed the dose should be repeated every 24 hours until improvement occurs. MACNAMARA and MORGAN give an average dose of about 60 c.cm. intrathecally at first. The serum should be warmed to 37° C. and it should be given slowly and by the gravity method after withdrawal of a larger amount of cerebro-spinal fluid. A second intravenous dose or even a third may be necessary if the response to the first is not immediate.

The international committee's new book on poliomyelitis shows how tremendous is the mass of information about this disease already collected. The problems of its epidemiology, prophylaxis, and specific remedies are bewildering, and it is a relief to turn to branches of practice whose principles are clearly laid down. It is hard to speak too strongly of the importance of caring for paralysed limbs from the very outset of the illness, and the ways in which this may be done are set out in our present issue by Mr. ALAN TODD.

## PREVENTIVE DENTISTRY

THIS year, for the first time, the British Dental Association held its annual meeting outside Great Britain, and the proceedings of the Toronto Congress, fully reported in the October issue of the *British Dental Journal*, are likely to be long remembered with satisfaction. The symposium on preventive dentistry is, perhaps, of special interest, both in revealing the present state of our knowledge and in indicating the trend of thought in this country and in America. The first paper on preventive orthodontics, by Dr. MARTIN DEWEY, of New York, shows how this branch is growing, and while still concerned with the treatment of irregularities of the teeth, is actively engaged in the more important task of trying to prevent them. The implications of preventive orthodontics go far beyond æsthetics, for it is recognised that irregularities of the teeth predispose to dental caries and pyorrhœa. DEWEY divides the causes of malocclusion into three groups—inherited, congenital, and acquired. Some of the congenital factors can be controlled. The most important is malnutrition, and here he lays great stress on nourishment of the mother during pregnancy. Preventive orthodontics begins before the birth of the child, and the real task of the orthodontist in this connexion is, he thinks, to educate the medical profession. Malocclusion, he holds, is a disease of civilisation, because civilisation has produced food fashions which make mastication unpopular and unnecessary. This lessening of the function of the jaws is reflected in impairment of growth, and even if a vigorous habit of mastication be adopted in later life, this cannot compensate for the invaluable stimulus of use while the permanent teeth are developing and the growth of the jaws is most active. Another factor of much importance in the prevention of malocclusion is normal nasal breathing. Mouth-breathing, he believes, is becoming much commoner and brings about a series of harmful results in gums, jaws, and teeth. Finally, the early treatment of malocclusion—while the deciduous dentition is alone affected—falls properly into the category of preventive orthodontics, since at this time the treatment is relatively simple and will prevent deformity of the permanent teeth. All malocclusions are progressive and none of them is self-corrective.

The second paper, on the prevention of dental caries, was by Mr. A. E. ROWLETT, who represented England in the symposium; it is a thoughtful presentation of a subject singularly complex. There are three main ways in which caries might be preventable: (1) by the resistance of the teeth themselves, which is another way of saying that the structure of the teeth is the all-important factor; (2) by the action of the saliva combined with a diet rich in detergent elements, and, conversely, poor in the sticky, fermentable carbohydrates; and (3) possibly by lessening the activity of the acid-forming bacteria of the mouth. ROWLETT points out that the protagonists of these three schools of thought can all claim a good deal of experimental and clinical evidence in support of their views. But so far, he thinks, it is impossible to say decisively that any one method can be relied upon to prevent caries. Of particular interest is his account of peoples living under primitive conditions and possessing a natural immunity to dental decay. But, he remarks, while the solution of the problem may lie in the absence of caries in the inhabitants of Tristan da Cunha, the multiplicity of factors involved makes it impossible to assess their individual value. "It does not help us that theorist after theorist may declare that the perfect teeth of the islanders is proof of his own particular contention." At present, he believes, all methods which appear to offer means of preventing caries must be adopted, but as yet there is no certain and easy method of avoiding it.

Writing on the prevention of periodontitis (pyorrhœa), Dr. HAROLD BOX, of Toronto, whose researches on this disease have done so much to elucidate its pathology, is less hopeful in tone. He reviews the present state of our knowledge, and concludes that the most important ætiological factor is an abnormal occlusion of the teeth which leads to a state of strain on the supporting tissues. This faulty occlusion, according to BOX, is of relatively modern onset, and is correlated with changes in dietetic habits and an alteration from an edge-to-edge occlusion to an overlapping one. The prevention of periodontitis, according to this view, lies chiefly in the restoration of a balanced occlusion. Something can be done by the dentist to bring this about, but it is, in BOX's opinion, a

form of treatment for the specialist rather than for the general dental practitioner. "Prevention of periodontitis for the community, as distinct from the individual under expert care, is as yet non-existent and the outlook is frankly pessimistic." In the final paper of the series Dr. R. G. AGNEW reminds us that pyorrhœa is by no means confined to civilised man. He has visited some of the primitive races living in the Himalayas whose diet is almost exclusively maize, supplemented by a few vegetables. He found that the mouths were so dirty that he had to remove mounds of corn-meal from the teeth in order to examine them. Caries was almost non-existent but, by contrast, pyorrhœa was common. In observations like this, which are now rapidly accumulating, there must surely be clues that will enable us before very long to fit the parts of the puzzle together. Despite Dr. BOX's warning against optimism—and it would undoubtedly be echoed by most authorities to-day—it is hard to believe in the impossibility of devising some effective and relatively simple scheme of dental prophylaxis.

## THE DOCTOR'S DAY

"HAPPY the people whose annals are blank in history's pages" is a saying attributed to MONTESQUIEU; the sentiment is inverted by modern phrasing in the journalistic proverb, "Bad news is good copy." It is for this reason that there is little contemporary record of the doctor's life—how it is he lives and what it is he does. The "bad news," in other words the lurid happenings, do occur, but not with the frequency that morbid or romantic fancy suggests; and when they do occur, while they would furnish material for popular excitement, they are often exactly the events which cannot be recorded, for this or that reason, in a public manner. The seamy side of professional life, it is true, is presented unostentatiously at the board meetings of medical protection societies, and is briefly delineated in certain annual reports; while the adventures of those who have to appear before the General Medical Council in various circumstances may figure prominently in the lay press. These things have what is called "news value," and their appreciation is raised by their rarity. They are the sensational or sordid things which the more credulous seem to hold make up the doctor's day. When Dr. Jekyll is accompanied by Mr. Hyde he secures a notoriety which he and his colleagues regret, but the notoriety is out of all proportion to the significance of the occurrences, and is enhanced by their rarity. Every doctor, it is true, must be prepared for a plunge into drama, just as he must be prepared to meet a clinical emergency. On any day he may be involved in a legal suit, with issues of high "news value," or be confronted with the need to make a decision upon which life will depend. These things are sporadic not epidemic in the professional diary, and receive generous attention. But the working day escapes record to such an extent that few doctors know how their confrères along different lines of activity spend their day. To describe in detail the life of the doctor, either generally or along its various professional objectives, has been hardly attempted; the sympathetic studies of SCOTT, TROLLOPE, and GEORGE ELIOT are not forgotten, but serve to show how difficult it is to tell the story from without. On another page appears the first of a series of articles entitled "The Doctor's Day," contributed upon invitation by practitioners in various walks of medicine—an attempt to write the story from within. The articles are written, it will soon be seen, on no uniform plan, the authors recording their personal experiences, and preserving anonymity. For the information of those who like a tale to have a cheerful message we may disclose the fact that, speaking generally, the contributors to the series have found themselves happy in their lot.

## UNEMPLOYMENT AND HEALTH

THIS week has seen a parliamentary debate on unemployment and the issue of a final report by the Unemployment Insurance Commission. The political issues are once more before the Government and the country. But as year follows year many people are becoming convinced that no political solution will be adequate—that the future of industrial society depends less on schemes of payment than on the adjustment of minds. A social revolution is in rapid progress; the time has gone when anyone can justifiably feel that men who are out of work have only themselves to blame, and the time has come when everyone must reconsider his responsibility towards them. On these matters of ethics the medical profession may be supposed to have nothing to say—a view which, we are glad to think, is not universally held; but where physical and mental health is in question medicine is deeply concerned. The special contribution should here be the supply of accurate information. It is being stated, for example, by untrained observers that malnutrition is becoming widespread in town and country, and it is important that the public, as well as the Government, should have the evidence of trained observers by which to judge this opinion. Is this evidence as readily available as it should be? In the Commission's report it is stated as a fresh principle of the Bill of 1924 "that an honest man shall not starve though he be unemployed," and the Blanesburgh Committee said that ideal benefits should be sufficient to prevent the insured man from being haunted by the fear of what must happen to him if he is unemployed. The present scheme was not intended (p. 190) to provide complete subsistence, and the Minority Report of the Commission quotes (p. 377) the feeling of responsible people that "benefit is now failing to maintain families adequately even at a bare maintenance level." Is this true?

THE new home of the British College of Obstetricians and Gynæcologists, 58, Queen Anne-street, London, W., will be formally opened by H.R.H. the Duchess of York on Monday, Dec. 5th, at 3 P.M., and in the evening of the same day a dinner of the College will be held at Grosvenor House, Park-lane. The President of the College, Prof. Blair Bell, will preside at the opening ceremony and the dinner. Fellows and Members who wish to be present at either should apply for tickets at once to the Hon. Sec., 58, Queen Anne-street, London, W.

# ANNOTATIONS

## PYELITIS IN PREGNANCY

THE dilatation of the upper urinary tract which is associated with pyelitis of pregnancy has long been known, and several explanations of its cause have been suggested. Opitz attributed the dilatation to compression of the ureter between the uterus and structures at the pelvic brim. Stoeckel drew attention to the atony of the ureter which sometimes produced dilatation throughout its entire length. Hofbauer believed that muscular hypertrophy of the lower end of the ureter and its sheath caused obstruction. Dr. Dugald Baird, in the Bradshaw lecture which we published last week, lays stress on atony as the primary factor. Dilatation of the ureters begins, he says, in very early pregnancy before the uterus is large enough to cause compression at the pelvic brim. Obstruction is a secondary factor and is first seen at the fourth or fifth month; it is usually most marked on the right side, the site of compression being the pelvic brim. The muscular hypertrophy noticed by Hofbauer is very slight at this stage of pregnancy and is more probably a protective reaction, developed only in the later months.

The cause of the atony, Dr. Baird suggests, is probably an endocrine disturbance, possibly deficiency in the posterior pituitary secretion. Ovarian cysts also cause dilatation of the ureters and renal pelvis, but this dilatation is never so great as that which occurs in pregnancy and the ureter is not dilated below the pelvic brim. Anselmino, Hoffman, and Kennedy have shown that there is an over-production of the posterior pituitary hormone in patients with toxæmia, and these patients never show atony of the urinary tract, and do not develop pyelitis. The atony and stasis are associated with a delay in excretion which can be demonstrated by renal function tests. Baird found dilatation present in 62 per cent. of primigravidæ and 42 per cent. of multiparæ in a series of 100 normal patients examined at monthly intervals. Previous estimates give widely differing figures, both above and below this. In a series of 96 patients who had sterile urine when first seen, 14·5 per cent. showed pus and organisms later in pregnancy. This may be compared with the results of an investigation of 406 unselected patients by Gladys H. Dodds.[1] She found that 11·2 per cent. developed bacilluria during pregnancy, but in only 7·6 per cent. was the organism *Bacillus coli*. Infection of the urinary tract is therefore a common complication of pregnancy. It sometimes gives rise to symptoms which may be diagnosed as due to albuminuric toxæmia; it is sometimes associated with hyperemesis, and occasionally with uterine hæmorrhage. Microscopical examination of the urine should always be done as a routine measure in the diagnosis of any toxæmia of pregnancy, for the typical symptoms of pyelitis are often absent. The source of the infection is not discussed in Dr. Baird's lecture. The condition is usually considered to be a descending infection, due to the excretion by the kidney of bacilli circulating in the blood. The bacilli probably come from the colon and would not be able to infect a normal urinary tract. Constipation, which is commonly present in cases of pyelitis, is probably the cause of the absorption of an abnormal number of bacilli. A paper by H. F. Helmholz[2] on spontaneous pyelitis in the rabbit suggests an ascending infection for this type of pyelitis. The rarity of post-mortem examinations in pyelitis of pregnancy makes it difficult to come to a final conclusion.

The routine treatment of pyelitis by alkalis, followed by acid sodium phosphate and hexamine when the temperature has been normal for a week, is only partly successful; but postural treatment, designed to relieve pressure at the pelvic brim, is remarkably effective in some patients who are resistant to treatment with alkalis alone. Dr. Baird suggests a complete urological examination including catheterisation of the ureter. Ureteric catheters may be left in, and the drainage of the renal pelvis which follows will often determine the subsidence of acute symptoms. The problem of cure is more difficult. Treatment of pyelitis by a ketogenic diet after the acute stage is over has given better results than the older treatment by acid sodium phosphate. If the urine can be maintained at a pH of 4·6 to 5·0, growth of the colon bacillus is inhibited and the urine becomes sterile. This method, which is still in the experimental stage, may become the routine treatment of the future.

[1] Jour. Obst. and Gyn. Brit. Emp., 1932, xxxvlii. 773.
[2] Surg., Gyn., and Obst., October, 1932, p. 449.

## PROLONGED ARTIFICIAL RESPIRATION

THE recent occurrence in this country of a number of cases of anterior poliomyelitis giving rise to respiratory paralysis has emphasised the importance of having available methods of artificial respiration which can be carried out over periods of many hours or days. Although the course of the bulbar type of paralysis (a form of the disease which is fortunately rare) is unlikely to be permanently benefited by artificial respiration, there are cases in which the diaphragm or intercostal muscles are affected where the procedure may be a life-saving one if respiration can be maintained until some recovery of the paralysed muscles has taken place. In all types of case the patient's distress is likely to be very greatly relieved. Manual methods (of which the Schafer is far the most satisfactory) have the great advantage of being immediately available and readily applied. They are usually without danger, though damage has been done by a heavy operator applying pressure to a patient with broken ribs, and a number of deaths from ruptured liver have occurred from the use of Howard's method. Even a team of trained operators, however, can hardly apply these methods for more than a limited number of hours, and for intractable cases mechanical methods become desirable. The older methods of pumping and sucking air directly into or out of the lungs have been generally abandoned owing to the large number of deaths which occurred from rupture of the lungs or stomach. Nowadays the lungs are made to fill and deflate rhythmically, by applying negative or positive pressure to the outside of the abdomen or thorax. The use of the Drinker respirator in poliomyelitis, carbon monoxide poisoning, and asphyxia neonatorum has been described and discussed on several occasions in our columns, most recently a fortnight ago; and since then reports of its use at the Wingfield Orthopædic Hospital, Oxford, confirm again the fact that it offers a most efficient method of applying artificial respiration over long periods. In our last issue Dr. F. C. Eve described a method of using gravity for actuating a flaccid diaphragm. The patient is laid prone on a trestle which is seesawed about its mid-point; the weight of the abdominal viscera serves to raise and lower the diaphragm with resulting filling and emptying of the lungs. (It may be pointed out that in the Schafer

method also the diaphragm is raised by pressure of the abdominal viscera, in this case effected by direct pressure applied to the small of the back.) Dr. Eve reports the trial of his method on the normal subject, and in one case of post-diphtheritic paralysis and one of Landry's paralysis. It will be of interest to see if his expectations are justified by further clinical investigation of the method, which has the great advantage that a minimum of apparatus is required, and this can be rapidly extemporised. The possible regurgitation and inhalation of stomach contents is a danger which might in practice prove insurmountable. Another method in which the diaphragm is raised and lowered by alteration in the pressure of the abdominal contents has been described by Dr. Rudolf Eisenmenger in a recent lecture to the Society of Physicians in Vienna.[1] The apparatus, which he graphically describes as "The Biomotor," consists of a flexible shield across the concave surface of which is stretched a rubber diaphragm; the convex surface is connected with two electric motors by means of which air can be driven into, or sucked out of, the shield. The rubber diaphragm is closely applied to the upper abdomen and lower part of the anterior chest wall of the patient, so that the abdominal wall is alternately sucked outward and compressed. In this way, the patient's diaphragm is rhythmically lowered and raised. The speed and depth of respiration can be varied at will, and the author claims that the apparatus, in addition to providing artificial respiration, serves to aid the circulation of blood which is driven from the liver and splanchnic region towards the heart.

## UNIVERSITY OF DURHAM: NEWCASTLE COLLEGE OF MEDICINE

THE publication of certain facts in connexion with an inquiry into the administration of the Newcastle College of Medicine has revealed two things: first, that any detailed comment on the situation would be certainly inexpedient and possibly unfair, while all that has happened is sub judice; and secondly, that there can be no reason why the inquiry should be delayed in face of the resolution of the Court of Governors of the College in its favour. There is superabundant evidence of the need for the inquiry, and it is evident that the College may suffer by the prolongation of the existing situation. The medical profession has a strong interest in a right settlement of the important points at issue; the general constitution of the College of Medicine indicates this. The governors—elected, contributory and representative—number 128, mainly non-medical and non-university members, while the executive council consists of 28 members, of whom 11 are medical; 9, including persons who may be medical, are representatives of the Court of Governors, the rest represent Armstrong College and other sections of the University. The controlling body of the College has had within it a powerful medical section, and to the medical profession at large the reasons should be made clear how and why the present state of affairs has come about. This does not mean that virtue lies in the publishing of disputes where personalities are freely employed; but it does mean that the medical public should know what has caused a serious cleavage of opinion among those responsible for the medical school of a university. Lord Londonderry, as Chancellor of the University of Durham, with the pertinent evidence before him, has said that an independent inquiry should be instituted into the administration and constitution of the college of medicine of the University; the governors of the College, by a large majority, have found the Chancellor right. There seems no reason for delay in the consequent procedure.

[1] Wien. klin. Wochenschr., 1932, xlv., 1105.

## GALL-STONES

THE recent international congress at Vichy[1] discussed the major problems of biliary calculus and its sequels. The tone of many of the papers read revealed a new spirit of caution, contrasting with the extremely active attitude towards gall-stones predominant a few years ago. Precision in diagnosis rendered possible by the introduction of cholecystography has contributed to this change. Time was, as R. Gilbert (Geneva) pointed out, when the surgeon had his knife into the gall-bladder which filled adequately but emptied with "pathological" slowness. Failure to fill or inadequate (mottled) filling are now demanded as the real evidences of disease. Dr. Gilbert claims that even in cases with chronic jaundice cholecystography may give the required clue. On the biochemical side, N. Fiessinger (Paris) and J. Dieryck (Louvain) had to admit that the laboratories are not yet able to give much assistance. Deeply interesting and technically adroit though their work has been during the last decade, chemists are still unable to assess the extent of damage to the liver in jaundiced cases, or, when jaundice is not present, to offer much help in diagnosis or treatment. Dieryck summarises his conclusions thus:

(1) Investigation of biliary function does not give precise information on the importance of the lesions of the hepatic parenchyma and does not allow a clinical prognosis to be made.

(2) Investigation of the nitrogenous function necessitates a delicate technique and leaves a good number of cases of "slight hepatitis" undetected.

(3) Investigation of the excretory function of the liver is not indicated in this affection.

(4) At the moment one cannot judge the state of the liver either by the study of the antitoxic function or by the metabolic disturbances of the lipoids.

(5) Investigation of the glycogenic function by production of galactosuria and the study of the total and partial concentrations of galactose eliminated, allows the state of the liver to be revealed and its gravity to be appreciated. Besides this, it distinguishes a mechanical jaundice (obstruction of the bile-ducts) from a hepatic jaundice (due to cellular disease).

Turning to pathogenesis, no one can yet assert with conviction that the origin of biliary calculus is exactly understood, but it is worthy of note that throughout this congress there was little if any dissent from the present-day doctrine that (1) disease of the walls of the gall-bladder is an invariable accompaniment of cholelithiasis, and that (2) many examples of the disease are complicated by a serious degree of hepatitis, which may not only increase the hazards of operation but will itself require treatment even when the gall-bladder and its contents have been removed. So many speakers emphasised this latter point that it is only fair to point out that the predominance of hepatic complications is the natural result of an ultra-conservative attitude towards surgical treatment. While the surgery of the biliary tract must never be lightly attempted, when expert help is available it becomes a grievous mistake to permit repeated attacks of colic or jaundice before the surgeon is called in. It would not be right to state the matter so strongly without adding that it is just the attack of colic or of jaundice that justifies surgical intervention. J. V. Donnet (New York) uttered a

[1] See THE LANCET, Oct. 29th, p. 976.

serious warning to those who would too lightly remove the gall-bladder; experimental removal of the gall-bladder, he said, is always followed by dilatation of the biliary channels, with progressive fibrosis and degeneration of their walls. H. Béclère (Paris) gave a vivid picture of the effect of cholecystectomy on neighbouring organs:

> In many cases, he said, distress continues after cholecystectomy and new disturbances may appear. Radiological examination may reveal the character of fistulous tracts, and sometimes calculi or a bit of drainage-tube remaining in the lower portion of the common duct. Radiography, preceded by radioscopy, may show lesions of perivisceritis, so frequently following ablation of the gall-bladder. The duodenal bulb is always deformed after cholecystectomy. In the presence of identical deformities, distress occurs in some cases, while in others it may be absent. Perivisceritis may not be limited to simple deformity of the bulb; apical difficulty, imprisonment of air-bubbles, and version or torsion of the bulb may exist. Difficulty in the upper bend (superior genu) occurs fairly frequently and secondary folding or bending of the bulb may be produced. The deformity of the bulb rather commonly has the so-called "bucket" aspect, which shows the presence of embarrassment, sometimes accompanied by rather severe pain. Stenosis when more highly developed may require supplementary operation; section of adhesions or gastro-enterostomy. Adhesions may also occur at the second portion of the duodenum, presenting certain characteristic deformities in the radiogram. The right colon may be surrounded by or embedded in the mass of adhesions present. When the abdomen is suddenly hollowed by an abrupt movement, the organs lying about the duodenal centre are displaced in a single mass. These various lesions compose the painful consequences of cholecystectomy.

If, then, there are good reasons for surgical intervention in many cases of gall-bladder disease, there are equally good reasons for the exercise of the highest skill in the selection of appropriate cases. While it may be true enough that the patient who has been operated on for biliary colic will remain the surgeon's friend, the patient who is operated on between attacks of jaundice has really stronger reasons for gratitude; but the surgeon who operates on patients in whom gall-stones have provided nothing more alarming than dyspepsia is creating for himself just so many potential critics.

## THE RISKS OF SPECIALIST PRACTICE

Mr. Musgrave Woodman's presidential address on the Throat Surgeon and the Law, delivered on Nov. 4th before the Laryngological Section of the Royal Society of Medicine, was not confined to the discussion of problems affecting only the specialist but covered most of the legal risks to which the whole profession are subject. He gave first a summary of the legal position in which the surgeon specialist is placed, pointing out that the performance of a specified operation is in law a matter of contract. The patient, if conscious, must consent before any operation, whether great or small, is carried out. If, as the operation proceeds, some more extensive surgery is required, the surgeon will not be held liable for exceeding the limits of consent in order to save life; but the burden of proof lies on the surgeon. It is prudent to have a responsible relative within call to give consent when required. Patients should be warned beforehand if the likelihood of any important extension is foreseen. Performance of the wrong operation is not a negligible risk; a safeguard for preventing such a mistake is to read the notes of the case or a special operation card immediately before the operation. Another possible source of legal action is the use of methods which go beyond the accepted practice of the day; here the eighteenth-century case of Baker, senior surgeon to St. Bartholomew's Hospital, remains as a warning. Analysing the degrees of negligence, civil and criminal, the duty of skill (varying with the status of the practitioner) and the duty of care, Mr. Woodman dealt also with responsibility for the acts and omissions of assistants, presumably introduced by the surgeon himself, and of nurses and attendants, as illustrated by hot-water bottle cases. The obligation of secrecy received due attention; special mention was made of the difficulty where an employer sends a workman to the surgeon and, having paid the consultation fee, expects to be told all about the man's condition. Mr. Woodman suggests the examination of such patients in the presence of the employer where possible, otherwise to refer the employer to the patient for information. Turning from the purely legal to the practical hazards, Mr. Woodman touched on such diverse incidents as prosecutions under the Road Traffic Act (the smell of ether, he remarks, may readily be mistaken for alcohol by a constable), the careless use of radium, and the accidental dislodgement of a tooth while a gag is being applied to the mouth. He cautions the surgeon to expect less mercy over a tooth dropped into the lung than the dentist will receive whose duty it is to remove the tooth intentionally. A peril of rhinological practice is to leave ribbon gauze packing in the flaps of the nasal septum, in the antrum, or high up in the nose. Careful search should always be made to see that no foreign bodies have been left behind. A swab in the mouth or pharynx should have a silk thread leading out of the mouth; gauze in the nose should have an end hanging out over the lip. The septum operation has two pitfalls. One is depression at the junction of the cartilaginous and bony portion of the bridge; if this occurs, it is a profound mistake to belittle the result to the patient. To prevent a possibly heavy claim for damages Mr. Woodman's counsel is that a female patient in particular should be told that, if she is dissatisfied with the shape of her nose, it shall be made into any shape she wishes by the grafting of cartilage without further fee. Perforation of the septum (the other great danger) must also be taken seriously; otherwise, if the patient drifts into the hands of another practitioner who quite innocently draws attention to it, a legal action may follow. Then there is the possible mischance of damage to the facial nerve in mastoid operations; if it is more than a simple operation, it is well worth while to warn the patient in advance of this serious contingency. Lastly, Mr. Woodman mentions the anxieties associated with diathermy and anæsthesia, and the question of explosions. In diathermy, he said, the surgeon is well advised to employ a skilled electrician to relieve himself of responsibility for serious variations in the intensity of the current; burns, which result if the electrode touches some part not under treatment, may be actionable injuries. The respective responsibilities of surgeon and anæsthetist have never been clearly established. The surgeon chooses the anæsthetist and is answerable for his skill and care but not for his actions in administering the anæsthetic; but the general supremacy of the surgeon in the operating theatre attracts to him a corresponding liability. As for explosions, Mr. Woodman believes most of them to be attributable to badly constructed electric bulbs introduced into the mouth or bronchus. Ether vapour, relatively non-inflammable in concentration, is highly explosive when well diluted with air; oxygen converts a simple explosion into a detonation; in the most serious cases the flame appears to flash up the anæsthetic tube and the apparatus is blown up, with resultant injuries to patient and surgeon so grave that no amount of precaution can be deemed excessive. Mr. Woodman's warning should be well

heeded. Whatever the operation and however small the risk may appear, constant care is essential. There is a species of legal action to which he did not refer, which is threatened in a blackmailing attempt to evade the payment of fees. Threats of this kind seem to be on the increase.

## MODERN AIDS TO ANÆSTHESIA

OPENING the first meeting of the session, the new President of the Section of Anæsthetics of the Royal Society of Medicine, Dr. Charles Hadfield, passed in review the modern aids to anæsthesia. Paraldehyde, avertin, the barbiturates, and carbon dioxide naturally formed the basis for most of his comments, which were catholic and judicious. He did not touch on local analgesics or on methods of administration. The present aids at our disposal, in the form of what are called basal narcotics, excellent as they are, still leave room for improvement. Dr. Hadfield pointed out, giving illustrative cases, that some of them are not free from danger, and others are not entirely dependable in their action. Dr. Hadfield regarded avertin as probably the most popular of these drugs at present, and expressed surprise that paraldehyde, the first of them to be employed and still perhaps the safest, is not more widely used. He alluded to cases of intestinal atony occurring after avertin and after other basal narcotics in which he believed these drugs could not be entirely exonerated, and called attention to the risks of a multiplication of preliminary drugs administered to any patient.

Several speakers testified to the good results they had obtained by following nembutal with chloroform, but one mentioned a case in which this combination of drugs, although given only in small doses, had resulted in a sleep which lasted for three days. Dr. Hadfield raised the question of the true nature of narcosis from nitrous oxide, relating interesting examples of the recurrence of mental impressions made during the unconsciousness due to this agent.

## ALUM-TOXOID AS AN IMMUNISING REAGENT

AMONG the more important recent developments in active immunisation against diphtheria has been the introduction of toxoid treated with alum. So far the use of this material has passed little beyond the stage of animal experiment, but the valuable report of Dr. J. C. Saunders on p. 1047 brings the possibility of its routine use in human immunisation a step forward. A. T. Glenny's claim that alum-toxoid (A.M.T.) is an immunising agent of exceptional potency has been abundantly confirmed by almost all subsequent workers. It is fairly clear that the secret of its efficiency lies in the fact that the alum-toxoid complex is removed very slowly from the site of its introduction, and the animal is thus submitted for a long time to a continuous antigenic stimulus. A similar explanation serves to explain the superior antigenic properties of other preparations that are poorly absorbed, such as toxoid-antitoxin floccules and the toxoid-tapioca mixtures of Ramon. A certain amount of human immunisation has already been carried out with alum-toxoid by the workers of the Wellcome Research Laboratories, by Park and Schroder in New York, and by Wells, Graham, and Havens in Alabama, and the results of these trials are in agreement with Dr. Saunders's opinion about the high antigenic efficiency of the new preparation in human immunisation. But not all those who have taken part in the trial of the reagent have been equally satisfied with the reactions which follow its injection. There seems to be a distinct tendency for the material to produce rather obstinate indurations, and occasionally even cold abscesses, and these effects, if not very alarming, put it, in its present form, at a disadvantage as compared with some of the older and better tried prophylactic reagents. Dr. Saunders gives no details of the actual reactions he met with, but he clearly implies that the reactions were not very serious, and that they gave him little administrative difficulty. This apparent discrepancy between his observations and those of others may perhaps be due to the fact that he practises in the Irish Free State where small-pox vaccination is really compulsory, and where the population is possibly more hardened to the minor inconveniences of immunising procedures. In this country it has been a steadfast principle of the laboratory workers responsible for making diphtheria prophylactics that immunising power, always allowing that it is adequate for practical ends, must take second place to considerations of public safety and even of public comfort. Thus the anomalous situation has arisen more than once in recent years, of foreign immunologists adopting extensively the use of a new prophylactic devised in an English serum laboratory, while it is still being tried with the greatest circumspection in its country of origin. We cannot but praise our serum laboratories for their forbearance in refusing to pluck the fruit of their own growing, which lies so temptingly to their hand. It is just this forbearance which has made England a safe country to be immunised in. "Insoluble" antigens such as alum-toxoid represent an important step forward in immunising science, but the time is probably not yet ripe when such material should be released for routine use.

## INFANT LIFE PROTECTION

AN important object of the Children Act, 1908, was to put a stop to the evils of baby-farming, and to a large extent it has been successful. Part V. of the Children and Young Persons Act, 1932, and the second and fourth schedules to the Act, which will come into operation on Jan. 1st, 1933, are designed still further to tighten up the regulations governing infant life protection. The Minister of Health has addressed to the London County Council and to maternity and child welfare authorities outside London a circular and a memorandum [1] setting out the powers and duties included in this part of the Act, together with a suggested form of advertisement for use by councils, and a leaflet of advice to foster-parents. A second memorandum, containing a summary of the statutory provisions, is intended for the use of infant protection visitors. Substantial alterations of the existing law have been made :—

The age under which reception of children for reward must be notified has been raised from 7 to 9 years. Instead of notifying the reception of a child within 48 hours, the foster parent must now notify it, with full particulars—

(*a*) In the case of a first child not less than seven days before reception.

(*b*) In the case of any other child not less than 48 hours before reception.

(*c*) In the case of a child already received without reward, within 48 hours after the undertaking to receive for reward.

Change of residence must also be notified to the authority at least seven days before removal, or, in case of emergency, within 48 hours after, and the death of a child, or its removal from the care of a foster-parent must be reported both to the authority and to the person from whom the child was received within 24 hours.

The Minister's statement that reports received by him suggest a lack of knowledge of the regulations

[1] Circular 1291. Memo. 165/M.C.W. 2*d*. Memo. 165A/M.C.W. 1*d*. November, 1932. H.M. Stationery Office.

governing infant life protection among authorities and their staffs seems to imply that evasion can and does occur. Sir George Newman pointed out in his last annual report that "the responsibilities of infant life protection are not confined to dealing with cases actually notified, but include the admittedly difficult task of ascertaining, and of having notified those cases which so far have evaded the law." Authorities are advised to issue advertisements warning foster-parents that children must not be taken for reward without previous notification, and inviting them to apply to the council for further particulars. Section 68 makes it an offence to publish any advertisement of persons or societies willing to receive children under 9 unless the advertiser gives name and address. In London a full-time officer is employed entirely in scrutinising such advertisements.

Except in London infant protection visiting is now usually carried out by health visitors, and under the new Act the supervisory duties have been extended to include the general health and well-being of the children. One task of the infant protection visitor is to recommend suitable homes for registration. The demand for good foster-mothers is far greater than the supply, and the temptation must be strong to accept homes which fall below the desired standard. Great caution, however, should be exercised both in recommending homes and in granting exemption from inspection; there is always a danger of the development of homes of an unsatisfactory nature under cover of the phrase "convalescent home" or "boarding school," unless care is taken to limit the number of children that may be received in any dwelling. New power is given to impose conditions to be complied with where the total children kept in the dwelling exceed a certain number. Another means of evasion is to assert that a child has been adopted, and here again every case should be investigated and the legal adoption verified. No doubt the law that is knave-proof has yet to be enacted; recently a scoutmaster and Sunday school teacher was fined for proved cruelty to a child which he had received without reward. But these changes and others under the new Act are designed for the safeguarding of a peculiarly helpless group of children. It is clearly desirable that the officers concerned with its administration should familiarise themselves with the whole law of infant life protection without delay.

## EARLY IMPRESSIONS OF CHLOROFORM CAPSULES

A SYMPOSIUM of opinion on the relief of pain in normal labour, contributed to the October and November issues of *Maternity and Child Welfare*, contains some early impressions of the value of the 20 ℳ chloroform capsules which are now being distributed for trial to hospitals and medical men.[1] Miss E. M. Pye, president of the Midwives Institute, finds that even this very small quantity of chloroform makes the mother less sensitive to pain, prevents her from inhibiting voluntary efforts, and enables her to sleep between pains. Dr. J. S. Fairbairn believes it to be incumbent on the medical profession to work out some means of giving analgesia that can be used by the midwife and will suffice to ease the final pangs of childbirth without interfering with normal parturition and without risk to mother and fœtus, and therefore welcomes a full trial of the capsules. Mr. L. C. Rivett from his experience regards this method as safe and foolproof, and trusts that before long it will be available to all midwives who gain a certificate of proficiency in its use. Miss M. M. Cashmore, sister-matron of the British Hospital for Mothers and Babies, as a result of an admittedly short trial, believes that the capsules, used in combination with a general sedative, will prove a real means of diminishing pain. Dr. Rhoda Adamson, after a longer experience, considers that the capsules gave a definite degree of subjective help to the patient, but were insufficient to allow as deliberate a delivery as can be obtained with inhalation anæsthesia given by the drop method. On the other hand she had no doubt of the advantage of chloroform capsules at the time of delivery when the alternative was no relief at all. Less favourable opinions were given by Dr. Edith Phelps and Dr. J. M. Oldaker. The former feared that even the degree of chloroform analgesia promoted by the capsules might cause delay in delivery, and make it difficult for the midwife to leave one patient to attend to others; while Dr. Oldaker, alone of those contributing to the symposium, has found the capsules unsatisfactory except at the beginning of the second stage. In her experience, gained when resident anæsthetist at the obstetric unit of the Royal Free Hospital, she found that the state of light anæsthesia produced renders the patient excitable and unruly when the head is being born, so that coöperation with the accoucheur is impossible. Moreover, she has found it extremely difficult, with the 20 ℳ available, to get the patient beyond this unruly stage.

This symposium makes a good beginning to the investigations which are being promoted by the National Birthday Trust Fund. The varied opinions at least lend no support to the view that such a small dose can be no more than a placebo.

[1] See THE LANCET, Nov. 5th, p. 1024.

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A Royal medal of the Royal Society has been awarded to Dr. Edward Mellanby, F.R.S., professor of pharmacology in the University of Sheffield and physician to the Sheffield Royal Infirmary, for his work on dietary factors, especially in connexion with rickets. The Society has awarded its Buchanan medal to Prof. T. Madsen, director of the State Serum Institute at Copenhagen, for his theoretical and practical work on immunity, especially in relation to diphtheria antitoxin. At the anniversary meeting on Nov. 30th, Sir Gowland Hopkins, M.D., will be recommended for re-election as president, and Sir Henry Dale, M.D., as one of the secretaries. Recommendations for the council include the names of Dr. J. A. Arkwright, Prof. A. V. Hill, Prof. E. Mellanby, and Mr. Wilfred Trotter.

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THE Thomas Vicary lecture will be delivered by Mr. Francis Weston, F.S.A., next Tuesday, Nov. 15th, at 5 o'clock at the Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C. The foundation of this lecture is interesting. Thomas Vicary was Serjeant Surgeon to King Henry VIII and Master of the Barber Chirurgeons. In 1919 the Barbers' Company undertook to provide an annual sum of ten guineas every five years for the purpose of instituting at the college an historical lecture in anatomy or surgery, to be called the Thomas Vicary lecture, the appointment of the lecturer being left to the discretion of the college. In 1923 and again in 1930 the Barbers' Company renewed the donation. Sir John Tweedy was the first lecturer. Mr. Weston proposes in his lecture to tell of the London Guild of Barbers which incorporated the Barber Chirurgeons. Tickets of admission are not required.

# SPECIAL ARTICLES

## MEDICINE AND THE LAW

### Alleged Exploitation of Patients

IN London and elsewhere where local Acts have so provided, a licence is required before an "establishment for massage or special treatment" can be carried on. Acting under its statutory powers the Public Control Committee of the L.C.C. on Oct. 28th refused to grant Edward William Barton-Wright a licence for an establishment at 6, Campden House-terrace, W.8. The applicant has for some years carried on an establishment at this address under licence, but objection was now taken on the ground that he had extracted large sums of money from his patients, the greater part of which he had apparently made no attempt to repay. It was stated that he had been three times adjudicated a bankrupt—in 1893, 1910, and 1932, with liabilities totalling approximately £8000 in all, and assets nil—and had not yet applied for his discharge. The chief officer of the Public Control Department based his objection to the applicant upon the following three cases. In 1924 a patient named Evans had been persuaded to lend £3500 on the security of a debenture in a company; this debt had not been settled. In 1929 another patient was approached with a view to his guaranteeing a sum of £400 towards the cost of leasing a shipbuilding yard at Warren Point in Ireland. The patient lent £400 on the assurance that it would be returned within eight days. It was not returned; solicitors were instructed, and Mr. Barton-Wright was stated to have disappeared from his lodgings. Judgment was obtained, but the sheriff's officer discovered that there were no personal effects. The patient said that only £61 had been repaid; he understood that Mr. Barton-Wright had seven or eight patients at 25 guineas a week. A third patient, a lady living at Holland Park, said she was persuaded to lend £1200 in 1929 in return for a debenture in a company; this was to be repaid within a year or two years. It was suggested to her that she should become secretary to a company called Nature Treatments, Ltd. She had been repaid only two instalments of £100 each, and it was on her petition that the applicant was recently adjudicated bankrupt again. Mr. Barton-Wright, in support of his application, said he had repaid the lady £375, including interest. He attributed his first bankruptcy to a conspiracy. He had always intended to pay back the various sums he had borrowed, but his creditors were cutting their own throats by attempting to prevent his obtaining a licence to carry on his establishment. He claimed to be a specialist in arthritis. His present troubles were due to an illness caused by his experimenting upon himself with a new cure for arthritis.

The grounds on which the L.C.C. can refuse a licence, stated in its General Powers Act of 1920, do not differ from similar provisions elsewhere—for instance, in the Surrey County Council Act of last year. A licence may be refused if the applicant is under age or "unsuitable to hold such a licence"—a phrase conveying wide discretionary powers. It may also be refused where the premises are unsuitable or the provision for treatment is inadequate or where the establishment has been or is improperly conducted, or where the massage or other curative treatment is administered by someone who "does not possess such technical qualifications as may be reasonably necessary." The Act does not apply to public hospitals and similar institutions or to establishments carried on by registered medical practitioners, subject to certain conditions. An applicant aggrieved by refusal may appeal to a metropolitan police magistrate and thence to quarter sessions. The 1920 General Powers Act superseded similar provisions in a General Powers Act of 1915 on the ground that the previous law had been found "insufficient for the prevention of immorality." There was, of course, no suggestion either of immorality or of technical incompetence against Mr. Barton-Wright in the recent proceedings. The gravamen of the allegations against him was that he exploited elderly and infirm patients by persuading them to part with their money. It is not difficult to imagine the view which would be taken if similar allegations were established against a registered medical practitioner in his relations with his patients.

### What is "Sickness"?

The Court of Appeal has affirmed the Divisional Court in holding that the word "sickness" in a wages agreement includes any circumstances which prevent a workman from carrying out his work and thus includes incapacity due to accident. A grocer's assistant was employed under an agreement containing a clause giving three weeks' wages during "periods of sickness." He injured his thumb and claimed under the agreement; his employers admitted liability under the Workmen's Compensation Act, but denied that the word "sickness" in the agreement included accident. The county court judge said that, if the agreement had been meant to cover incapacity due to injury from accident, it was inconceivable that it would not have said so expressly. The Divisional Court interpreted sickness as any morbid condition, irrespective of its cause. The Court of Appeal said sickness was in plain language an ailment which prevented one from being in perfect health. Sickness benefit in State insurance covers benefit paid for disablement as well as for disease. When, observed Lord Justice Scrutton, the marriage service prescribes the obligation to cherish "in sickness and in health," no one contemplates an added reservation "but not in the case of accident."

### A Priest's Refusal to Answer

Recent discussions on medical secrecy add interest to a case before the Nottingham magistrates (reported in the *Justice of the Peace*) about a month ago, where a Roman Catholic priest declined to answer a question which was possibly most material for the purpose of the proceedings then before the bench. A girl had taken out an affiliation summons against the putative father of her child. The priest was asked questions concerning a conversation he had had with the parties in his church vestry. It is easy to understand that the answer to such questions, presumably involving solid evidence as to admission or denial of paternity, might well have been conclusive in a disputed case. The witness declined to answer. He said he considered it his duty to maintain the sacred trust reposed in him even at the risk of a possible miscarriage of justice. The bench expressed the opinion that the refusal amounted to contempt of the court but it wisely took no action. The case was disposed of by an order made on the strength of other evidence available. Legally there are technicalities depending on the nature of the court concerned. Some courts are "courts of record"; others are not. If a contempt is committed in the face of a court of

record by the refusal to answer a lawful question, the judge may forthwith order the offender to be apprehended and imprisoned at the judge's discretion without further proof or examination. The High Court of Justice, the Court of Appeal, and the Court of Criminal Appeal are well-known examples of courts of record. The county court judges' power of committal for contempt is specifically dealt with in Sections 162 and 163 of the County Courts Act of 1888. Several generations ago the law officers advised that justices of the peace had no power to commit for contempt, and that the proper course was to indict the offender. Then came Section 7 of the Summary Jurisdiction Act of 1848, whereby a witness, appearing in court in obedience to a summons or warrant, may be committed to gaol for a period not exceeding seven days if he refuses to answer such questions as are put to him "without offering any just excuse for such refusal." If a witness appears voluntarily and is not brought before the court by summons or warrant, there is no such power to commit him. Whether the priest's explanation of his reasons amounted to "just excuse for such refusal" is not clear. The magistrates seem to have suggested that it did not, but, as already stated, the point was not pressed.

The position of priest and medical practitioner is in this respect comparable. The law may find means to put pressure upon each of them to answer some lawful question. There is no doubt whatever of the legal authority to exert this pressure. Judges and magistrates are sensible men, and will not be unaware of the substantial grounds on which a doctor claims (in the interests of his patient, of course, not in his own interests) the medical privilege which instructed public opinion approves. Thus a respectfully worded protest and explanation of the witness's difficulty will often win the court (as at Nottingham) to a tolerant recognition of the witness's genuine scruples and may avoid a crisis. If the court insists upon an answer, the witness may find himself in the position (which the witness at Nottingham would doubtless have adopted) of submitting to imprisonment with firmness in defence of the principle that confidence must not be violated. The less that such martyrdom can be accused of sham heroics or self-advertisement, the more impressive will be the effect upon public opinion. Without stirring public opinion the law will not be changed. Meanwhile there must occasionally be a definite clash between the admittedly well-founded principle of medical secrecy and the equally necessary condition of judicial authority. It is desirable that Parliament and Government departments should not multiply the occasions of conflict nor exacerbate them when they occur.

## VIENNA

(FROM OUR OWN CORRESPONDENT)

### CONGRESS OF GERMAN PÆDIATRICIANS IN VIENNA

A LARGE number of specialists on diseases of children, coming from many European countries and from North and South America, assembled last month in Vienna for the forty-third meeting of the Deutsche Gesellschaft für Kinderheilkunde, Prof. Freund, of Breslau, presiding. The discussions took place under three headings: (1) eugenic problems in pædiatrics; (2) pyuric conditions in children; and (3) the influence of atmosphere and climate on the child. In an introductory address Prof. Hamburger, chief of the Vienna Clinic for Children's Diseases, pointed out the progress made in research in this special branch within the last 40 years. Not only therapy, but especially prophylaxis, marked the advance in knowledge. A number of formerly lethal diseases such as diphtheria, scarlet fever, tetanus, tuberculosis, syphilis, and rickets had become much less frequent and virulent, or were on the verge of being exterminated. The prophylactic measures adopted by public health authorities, he said, had brought down infant mortality to low figures compared with the appalling percentage half a century ago. Welfare care for infants was chiefly responsible for the drop in the infant mortality-rates of many nations. Rickets, which 20 years ago was a disease of everyday occurrence, was nowadays almost extinct. Tuberculosis of childhood was less frequent and less dangerous; syphilis in children had become rare; nervous diseases in childhood however had increased in frequency, though it was also kept under better control.

The first communication (on eugenics) was presented by Prof. Pfaundler (Munich) who dealt with heredity, chiefly in connexion with twins, and laid special stress on the fact that besides the influence of the surroundings (the "milieu") a prominent part is played by hereditary strain ("erbliche Belastung"). These factors have hitherto been rather neglected in the study of pædiatrics. It is known that certain morbid conditions can be influenced by therapeutic measures, but they can be handed down from ancestor to progeny. Prof. Pfaundler's thesis was that advances in therapeutics may help the individual, but they endanger often the stock of health in the population. The physician is often faced by a dilemma. As a healer he should save life not worth living; as a eugenic statesman he should prevent a future danger to the community. For instance, juvenile diabetics can nowadays be kept alive by insulin, but they may live only to transmit their faulty or deficient metabolism to their descendants. Therefore the eugenic physician must study the disturbances caused by endocrine deficiencies or metabolic faults; and the pædiatrician must also be a matrimonial adviser. In the ensuing discussion the researches by Prof. Hammerschlag (Vienna) on hereditary deafness and deaf-muteness were praised, and the transmission of colour-blindness and hæmophilia were discussed.

The opening paper on pyuria was presented jointly by Nöggerath (Freiburg) and Lichtenberg (Berlin). They elucidated the problem from the standpoint of the pathologist and the clinician, and showed that the frequency of this condition is often underrated. Diagnosis should be easy if the possibility of pyuria is kept in mind in obscure cases of pyrexia. A lively discussion followed this communication, which was followed by papers on urographic methods on the child, by Frick (Giessen); chronic nephritis in childhood, by Geldrich (Budapest); and galactosuria in the child, by Fanconi (Zurich). A number of physicians presented papers on infectious diseases in infants, on the value of prophylactic vaccination and serum treatment in scarlet fever and in pertussis, and on myocardial complications in influenza and pneumonia. These papers came mostly from Hungarian and some Rumanian physicians. The third discussion, dealing with the effect of climate and weather upon the health of children, was opened by de Rudder (Munich) and Moll (Vienna). The first-named has studied the effects of climatic conditions upon start and development of disease. After explaining the effects of cyclone and anticyclone, high and low barometric pressure, and showing the

nature of mass-movement of dry or moist, warm or cold air, he demonstrated statistical data, proving that certain diseases are most prevalent at certain seasons of the year. It is well known that most of the infectious diseases of childhood reach their highest incidence in winter time; the same holds good, he believes, for the acute catarrhs of the upper air passages, for tetanic conditions, for eclampsia, hemiplegia, and even for ulceration of the duodenum and stomach. Prof. de Rudder distinguishes here between "climatic diseases" and "weather diseases." Some observers attribute the variations in the incidence of certain morbid conditions to variations of barometric, thermometric, or hygroscopic conditions of the air. Prof. de Rudder believes that to be due to changes of the electromagnetic condition of the atmosphere—i.e., to the effect of short-wave radiation. He suggests that when rheumatic subjects feel a change of weather conditions 24 to 36 hours before the actual change takes place they are feeling radiations from the approaching air masses. Prof. Moll discussed the therapeutic value of changes in climate. The children requiring "change of air" included anæmic, easily exhausted children, rather nervous, with little appetite, or with signs of late rickets, and those with chronic catarrhal affections of the air passages, and swollen glands. The first group were benefited by a prolonged stay at an altitude of 2000 to 4000 feet; the second group obtained more advantage from a stay at the seaside. These deductions had been drawn from observations on nearly 30,000 children, and the contra-indications to certain climates had also been learned. Patients with active disease of the lungs, with nephritis, acute and chronic arthritis, otitis media, and cardiac disorders were not, in Prof. Moll's view, fit for the seaside; tuberculosis of the bones and joints and glands obtained most benefit from higher altitudes (4000–6000 feet). A very important therapeutic factor was change of surroundings and of food.

### INFANT PROTECTION CONFERENCE

In conjunction with this meeting the Deutsche Vereinigung für Saûglings und Kleinkinderschutz held its fifth convention on the following day, Prof. Roff (Berlin) presiding. The proceedings were devoted solely to the subject of tuberculosis, and four reports were presented. Prof. Hamburger (Vienna) spoke on the effect of heredity, natural resistance, and immunity upon the course of tuberculosis in children. He pointed out that in taking the history of the child one must also investigate all cases of infantile tuberculosis in the patient's family, not only that of the adults. The natural resistance against the tubercle bacillus being very inconstant, the time of first infection must be carefully sought; therefore he lays stress on a regular tuberculin test by Pirquet's method or by the percutan way, performed twice yearly on all not yet infected children. In the discussion Dr. Mommsen (Lûbeck) reported on the fate of the surviving infants from the disaster at Lûbeck. They were frail, suffered from intestinal troubles and anæmia, but showed no signs of primary tuberculosis. He believed that those who died received either a stronger dose or had a special disposition to infection.

Prof. Spitz (Mayence) discussed the expectation of healing of manifest tuberculosis in children. The earliest possible recognition of the infection was essential if a cure was to be obtained. At present over 25 per cent. of the cases coming to the sanatorium were brought too late. Prof. Spitz held that, especially girls of 8 to 10 years, if they were exposed to an infectious focus, should be examined regularly by X rays.

Prof. Langer (Berlin) pointed out that tuberculosis of the bronchial glands should receive great attention. A negative X ray picture was not sufficient. A searching clinical examination was necessary to ascertain whether or not the child was infected.

Prof. Duken (Jena) discussed whether the infected child should be sent to a health resort or a sanatorium. He believed that such children might regain health under their mother's care if properly supervised by the general practitioner. In opposition to this standpoint the Vienna school (Moll and Götzl especially) held that, not only the infected child, but even those endangered by their surroundings should be sent away. The congress supported this view.

## IRELAND

(FROM OUR OWN CORRESPONDENT)

### MILK LEGISLATION

In the Dáil last week Sir James Craig drew attention to the delay in introducing a Clean Milk Bill; clean milk being, he said, of vital importance to the State. The Minister for Local Government and Public Health, in reply, said that he hoped at an early date to put a proposal before the House and to promote legislation. The delay in dealing with the milk question is a discredit to both parties which have been in power during the last few years. Early in 1928 a commission on the milk-supply completed its report, suggesting legislation on certain lines, and it was promised that a Bill would soon be introduced. In July, 1929, the lines of the proposed measure were stated to the House, but, despite repeated questioning by Sir James Craig and others, no progress has since been made. The truth is that the agricultural interest is too strong on both sides of the House for any Government to find it easy to promote legislation which is likely either to increase the trouble or diminish the profits of milk-producers.

### THE CARE OF THE ILLEGITIMATE CHILD

The problem of the care of the illegitimate child appears to be becoming more serious than formerly in the Irish Free State. Addressing a meeting of the Society for Prevention of Cruelty to Children last week, General E. O'Duffy, Chief of Police of the Irish Free State, stated that in 1929 13 infants were murdered, there were 49 cases of concealment of birth, and 10 cases of young children being abandoned; in 1930 12 were murdered, there were 46 cases of concealment, and 11 children were found abandoned; in 1931 7 were murdered, there were 59 cases of concealment, and 8 were found abandoned. Dealing with baby-farming he urged a more effective administration of the present law, and also legislative provisions for the more efficient supervision and control of those who took charge of children. His suggestions included registration and inspection of the premises of any one who proposed to undertake the care and maintenance of children for reward. The registration should be annual, and there should be not only periodic but surprise visits of inspection.

OVERSTRAND HALL AS SANATORIUM.—The Leicester and County Hospital Society has decided to purchase Overstrand Hall, Cromer, for £7000 for a convalescent home. The house, which is said to have cost £67,000 to build some 30 years ago, was one of the early works of Sir Edwin Lutyens, and formerly belonged to Lord Hillingdon. As it stands it will hold 50 beds.

# THE DOCTOR'S DAY

"Come, tell me how you live," I cried,
"And what it is you do!"

## I.—GENERAL PRACTICE IN A CITY

THE layman's idea of the sort of life the practitioner leads is revealed in phrases such as: "I should not like my nights to be disturbed.' . . . "It must be terrible to be called away to some case just as you are going out for the evening." . . . "Fancy never to be able to make a definite engagement." Yet in actual practice, I think, unless there is an epidemic or a bad patch of emergency calls, this inability to keep a private engagement does not occur weekly, or even monthly. No doctor is bound to go to a street accident or to attend a person who sends for him. He has a perfect right to say "No, call in some other doctor," although he may hesitate to act in this way. While, however, he has a free hand with his private cases he has no such right if he is under agreement to attend an insured person. He must then under penalty respond to any message, and if through professional engagement, absence from home, or other sufficient reason he cannot himself attend, it is his duty to provide a deputy. For this sort of work he is very definitely on duty (self or deputy) for 24 hours in the day.

The following is an account of one recent day's work. I am a member of a firm in a London suburb, and this day probably represents a little above the average amount that I would normally do at this season of the year. It will be seen to include duties which might not be regarded as professional work, but which have to be undertaken for elderly people alone in the world by someone familiar with their wants, their means, and their aspirations.

### A Particular Day

On this particular day the night-bell rang at 6 A.M. and a man's voice in the speaking-tube said would the doctor come at once to Mrs. X at the address given; a maternity case, nurse had sent him to ask me to come. The address was not far away, but the name was not known to me as a patient or as a confinement that I was expecting to attend; so after dressing I went to the surgery and looked up this patient's card, and found that my partner had made arrangements for the attendance whilst I was away on holiday. Her measurements were put down and were normal, so collecting the midwifery bag, and having made certain that the stocks it contains of pituitary extract, chloroform, sutures, antiseptics, &c., were in order, I set out and arrived at the case in about 20 minutes from the time I was called. Pains were normal, but progress was slow, and as she began to get tired I decided at about 7.30 to give a little help. I got back at 8.30 to breakfast, after which a shave and a bath made one feel presentable for the morning's work.

#### NINE O'CLOCK SURGERY

Six patients arrived for attendance. The first was a girl with a nasal catarrh; she did not look well, and the question of early tubercle was considered. The apices of her lungs, back and front, were listened to without discovering any abnormal sounds, and she was given a good tonic and told to return if not better. The telling of a patient when to return to see you again is quite an important duty. It is easy to do with panel patients because it costs them nothing, but I have always felt it a little difficult with private patients because of course it costs them a consultation fee each time they come; patients, however, expect you to tell them this, and I have on more than one occasion been surprised to hear a patient who was obviously ill say that he did not come back as he had not been told to. On the other hand, patients do appreciate the honesty of being told they need not return unless something else crops up to need attention.

The next patient was a man complaining of pain in the back and a cold. He had been working hard in a close atmosphere and getting very hot. Nothing organic to account for his pain was found, and he went away with some medicine apparently satisfied. Then followed a patient, who comes weekly for her panel certificate, suffering from nerve exhaustion. She has had both her ovaries and uterus removed years ago, and in spite of treatment of all sorts, including organotherapy, is still quite unfit for work. She is a loyal patient with implicit confidence in her doctor, but she is rather hysterical, easily annoyed, and extremely sensitive about being thought fit to work. She was sent to the regional medical officer some time ago, and the worry of that visit is still present in her mind. She resents the suggestion that she is thought by her sick visitor to be fit to work, when she has produced a certificate to the society from me saying she is unfit. This patient does not now take medicine unless she is worried by domestic affairs. She has had much trouble with her landladies and consequently many changes of address.

After this came a request from a widow for me to sign a certificate for pension purposes. As the pensioner's signature has to be recorded in my presence, I told the messenger I must make a visit for this purpose as the woman is not well enough to come to me. The last patient had been stung on the leg by a wasp; she had read in the paper how dangerous these stings could be, and would she be all right? She was reassured, treated, and left happily.

#### THE MORNING ROUND

Writing work followed, and at about 11 A.M. I started my round. The first visit was to an old lady with thrombosed varicose veins in her leg; she suffers from gout, and is inclined to make the most of her trouble. She was definitely better but still complained of pain; she was taking iodide and wanted more medicine. The second visit was to a small boy ill in bed with fever and diarrhœa. I had seen him two days previously, and in spite of careful examination could find nothing to account for his temperature. Paratyphoid, food-poisoning, tubercle were thought of, but nothing definite was again discovered. The case was too early for a Widal reaction to be of value, and I decided to wait and see what happened. The third visit was to the confinement of the early morning. She was going on satisfactorily. The mother had wanted a boy, but was now quite pleased with the girl and had no desire for me to put it back. I visited the chemist who does our dispensing, ordered some medicine to be sent, and then called at the bank to find out the size of my own overdraft as well as that of a patient whose finances I have to supervise.

The fifth visit was to a man with hæmaturia who is on my panel, but not drawing sickness benefit as he is over age. I suspect a papilloma of the bladder, but he refuses to have a special examination at hospital, and is quite comfortable in bed, and the bleeding is settling down. The sixth visit was to the widow who sent up to ask for a pension certificate. This sort of work, as well as the signing of passports, is much on the increase, and they entail an appreciable amount of work and time, when added up for the whole year. The passport does not need to have the signature witnessed but the pension paper does, and makes an extra visit for the day. These people as a rule are poor as well as old, and to get them to sign their name a second time—for they generally bring the paper up already signed—takes time. There is something wrong with the pen, or they cannot find their glasses, or they argue that Dr. X never asked them to sign the

paper again. However, when a doctor gives a certificate which contains an untrue statement he can be brought before the General Medical Council; there is no similar tribunal to deal with the clergyman, the bank manager, and the other select few nominated by authority as competent to do this work.

The seventh visit was to the elderly maiden lady whose finances I supervise. She has swollen feet and has recently been moved from the home of her ancestors to a furnished bed-sitting room, where I hope she will be able to pay her way and not get further into debt. I report the size of her overdraft, that her house has not been let by her agents, and that I have had to persuade one of the people to whom she is indebted not to issue a summons. All these things she takes cheerfully. In return she tells me how necessary it is for a cat to take liver only half cooked, and assures me she will be the possessor of much wealth very shortly. There is not much medical treatment in this case, nor much hope of affluence in the future. The next visit was to an elderly lady whose heart is frequently troublesome, and who had been stung by a wasp; the sting looked angry. Then to a young servant girl who has acute rheumatism, temp. 102° F., swollen wrists, and painful left knee. She was going on well.

The tenth visit was to an elderly maiden lady who has early glaucoma in the left eye, with attacks of pain, defective vision in that eye, a high blood pressure, and general feebleness. She was better, and I was not able to make out any increased tension in the left orbit by palpation. She finds time hang heavy as she is unable to get about quickly enough to keep warm. The eleventh and last visit before lunch was to a young school-teacher who suddenly developed German measles. The mother rather hopes that the father will be sent home from his work owing to the infection, but this does not happen. The girl is really very well in spite of a heavy rash.

#### AFTERNOON

A light and quick lunch was taken at 1.45, and soon after 2 P.M. more patients came for consultation. The first was a heart case, also suffering with pruritus. These cases are difficult to cure. The second was a lady at the climacteric with early myxœdema, who was taking thyroid. Her improvement was noticeable, and she was very grateful. The third case was a woman whom I had sent into hospital for an ectopic gestation some weeks earlier. She had had one miscarriage before, and she wanted to know whether it would be safe for her to have a child. Would she have another ectopic? Not an easy matter to advise upon. The last consultation of the afternoon was with a young wife who suffers from slight alopecia of the scalp and nervous depression. She was worried about her husband; she had found him out telling her lies about his movements, and there were two used theatre tickets in his coat pocket. Money was short, and she did not know what to do about it. Would she go bald, and so never be attractive to her husband again? She was given some lotion for the hair, medicine for her nerves, and some advice on men and women designed to allay suspicions.

As I was about to change for tennis I received a message from my partner asking me to see a rash he was doubtful about. The small boy seemed very ill; was it an infective condition? So I took the car out again, and on the way back I wrote out prescriptions at the chemist's shop for patients requiring medicine to be made up and delivered as soon as possible. After tea I changed and went to the club, but in the middle of the second set I was called to the 'phone about the boy I had seen in the morning with fever and diarrhœa. His temperature was 104° F.; would I come along. So I had to return home, change back into ordinary clothes, and go to see what was the matter. The boy was really the patient of my partner who had been away for the week-end and was taking surgery on this night. On my return from this visit I discussed the whole case with him, and told him what I had done and asked him to carry on. Soon after 7 P.M. I dined, and feeling somewhat tired after my day's work I read a book until bedtime.

### Other Days

Is this a normal day's work? Doctors vary in their statements as to the number of patients seen in a day; one man will say he has paid 120 visits, another that he has seen 50 people to-day. The first statement means that he has called at 120 houses, and has been told at most of them that the patient was going on all right. At such houses he made no examination; through experience of the appearance of an ill person he decided the statement was true, and he went on to the next case. Some practitioners are very clever at this sort of thing: eventually they make some ghastly mistake which may ruin their whole life. The other man probably means that he has seen 10 people in the surgery in the morning, 15 people in the evening, and visited 25 persons at their homes. This amount of work is quite consistent with efficient attendance, but allows no time for discussing the vicar or the young person who is always out late at night, to say nothing of politics. It is my opinion quite definitely that the practitioner who takes proper care of the cases he visits and makes sufficient examinations of those that require it, will have to be quite a fast worker to be able to do 30 visits between 9 A.M. and 6.30 P.M. Locality of course makes a difference.

If you are on the surgical or medical staff of a local hospital you may be called to an emergency or have to attend patients in the hospital. This work is done gratuitously. You may receive year by year only a formal vote of thanks from the governing body controlling the hospital, but you will gain experience in the treatment of difficult cases. Another duty you may have to work into your day is to take a patient to see a consultant, which takes time but is worth it. Misunderstandings are avoided and details of new treatments appreciated. And remember the consultant is a person who knows more and more about less and less, and is often glad of the practitioner's general knowledge. Part of the day will be filled up in attending meetings where your presence will be welcome if you show that you are keen to help your fellow practitioners. Schemes of public medical service for contract attendance on the dependents of insured persons are springing up all over the country; these schemes need local committees to run them. The panel committee of your area will want representatives. Travellers will want to interview you about the latest appliances, drugs, and instruments; I should like to pay tribute to the tactful way in which these men impart valuable knowledge to practitioners who will listen to them. Nurses are frequent visitors to the surgery endeavouring to obtain work for which they may have special training. In the early days of practice there will be frequent interviews with life insurance representatives, all eager to ensure your life and probably to make you an examiner of their company for your area.

This does not pretend to be a full list of the duties that fill up the general practitioner's day. He does not make a large income but his life is very interesting.

Articles in this series will include among others:—

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| County Health Officer. | The Medico-Legal Expert. |
| The Policeman's Doctor. | Giving Anæsthetics. |
| An Indian Day. | The Coroner. |
| Practice in a Country Town. | |

THE Export Brand of COW AND GATE MILK FOOD has been awarded the Grand Prix at the Salon d'Alimentation, Brussels, the important Food Exhibition in Belgium.

# CORRESPONDENCE

## "A COURSE IN OSTEOPATHY"

*To the Editor of* THE LANCET

SIR,—I have just read your summary (Nov. 5th, p. 1016) of a lecture lately delivered to old students of University College Hospital by Mr. Clifford White on chronic pelvic pain. In the course of his remarks Mr. Clifford White is reported to have said, "The treatment of sacro-iliac strain, in my opinion, should be by manipulation at the hands of a qualified man who has taken a course in osteopathy." It would be interesting to know where the students of University College Hospital are advised to go for "a course in osteopathy," and whether Mr. Clifford White has any first-hand knowledge of this particular form of American activity. It may not be irrelevant to remark that University College is the only teaching hospital in London that has not got an orthopædic surgeon on its staff.

I am, Sir, yours faithfully,

A. S. BLUNDELL BANKART.

London, W., Nov. 4th, 1932.

## CARBOHYDRATE METABOLISM IN TOXIC GOITRE

*To the Editor of* THE LANCET

SIR,—Under this heading you comment (Oct. 22nd, p. 908) on some recent work by H. J. John on the relationship between hyperthyroidism and diabetes mellitus as it appears clinically. Experimentally, a good deal of evidence exists which throws light on this relationship, and since no reference is made to this either in your comment or in Dr. John's article, I venture to summarise briefly this evidence. I have dealt with it at greater length in my book "Fever, Heat Regulation and the Thyroid Adrenal Apparatus," where also the application of the experimental findings to clinical conditions, including the glycosuria of hyperthyroidism, is discussed.

The experimental investigation has shown that hyperthyroidism and diabetes mellitus have many fundamental features in common. There is in both hyperactivity of the glycogenic function of the liver, meaning thereby an increased formation of carbohydrate from protein and a more rapid pouring out of sugar into the blood. This accounts for the similarity of the nitrogen metabolism in both conditions, and also for the fact that the liver is rendered glycogen-free both in experimental hyperthyroidism and in experimental diabetes. The absence of glycogen in the liver in these two conditions should not be interpreted as being due to an inability to "store" glycogen. One difference between the two conditions is that in diabetes mellitus the increased pouring out of sugar into the blood stream occurs in an organism in which the power of the tissues to oxidise sugar is impaired, so that the blood-sugar rises and sugar appears in the urine, while in hyperthyroidism there is general sympathetic stimulation with increased cellular activity, so that the increased output of sugar into the blood is dealt with by increased oxidation. The blood-sugar does not rise, therefore, and no sugar appears in the urine, but it is clear that glycosuria can appear more easily in such a condition than in a normal organism.

The essential dissimilarity between the two conditions lies in their intrinsic ætiology. The glycogenic function of the liver is influenced on the one side by the internal secretions of the thyroid and adrenal glands which stimulate it, and on the other side by the secretion of the islands of Langerhans which inhibits it. Hyperthyroidism—and hyperadrenalism—produce an increase in the glycogenic function of the liver as part of the general sympathetic stimulation, whereas in diabetes mellitus the operative removal or insufficient functioning of the Langerhans islets produces an increased glycogenic function by removal of an inhibition.

This conception is based essentially on the view of the glycogenic function of the liver as an autonomous internal secretion, and not as is generally done as a means of providing a "store" of carbohydrate in the liver. I have discussed the difference implied by these two conceptions at some length in my book, and it would take too much space to discuss it here. But as an example I may quote here the view expressed by Dr. John in the summary of his article, that of the factors which influence the "glycogenic depletion" of the liver one is: "a high metabolic rate which causes increased consumption of carbohydrate and depletes the insulinogenic stores, with resultant depletion of the glycogen store in the liver." This is tantamount to stating that when the speed of a motor-car is increased and more petrol is consumed, the increased speed—i.e., the high metabolic rate—causes the increased consumption of petrol, whereas, of course, exactly the reverse represents the causal connexion.

The conception outlined above enables us to understand why in hyperthyroidism glycosuria may appear more readily than in a normal organism, why insulin has a beneficial effect in hyperthyroidism, why the reverse combination—thyroid administration in diabetes mellitus—has a harmful effect, why the fever produced by certain bacterial infections aggravates the hyperglycæmia and glycosuria in diabetes mellitus, and a number of other clinical observations.—I am, Sir, yours faithfully,

W. CRAMER.

Imperial Cancer Research Fund, Nov. 3rd, 1932.

## PROTEOLYTIC FERMENT IN AMŒBIC DYSENTERY

*To the Editor of* THE LANCET

SIR,—In your issue of Oct. 29th (p. 972) Dr. H. M. Woodcock states that there are many reasons for doubting that amœbæ may secrete a proteolytic ferment. It is interesting to note, however, that there is an amœba (*Hartmanella castellanii*, Mackenzie Douglas) which secretes a proteolytic enzyme with certainty, as, when grown on gelatin and serum, it will produce liquefaction of these media. Moreover, if an emulsion of the amœba is filtered through a Berkefeld candle and a few drops of the filtrate are placed on a gelatin slope, pitting of the medium will be produced within 24 to 48 hours. To grow the amœba on gelatin or serum, the presence of certain bacteria or fungi (alive or dead) is necessary, but I have used in my experiments a bacterium and a fungus which do not produce liquefaction: *Bacillus typhosus* and *Cryptococcus pararoseus*. Of course these experiments do not mean that the ferment will have a lytic action on living cells and tissues; they simply mean that a proteolytic ferment may be produced by an amœba. Further particulars of this amœba may be found in my paper in the *Journal of Tropical Medicine and Hygiene*, July 1st, 1930, in a paper by Mackenzie Douglas (ibid., Sept. 1st, 1930),

and in the recent papers by van Rooyen (ibid., April 15th and Sept. 1st, 1932).

I shall be pleased to supply workers interested in the subject with cultures of the amœba.

I am, Sir, yours faithfully,

ALDO CASTELLANI.

The Ross Institute, Putney Heath, S.W., Nov. 2nd, 1932.

## AN ANOMALY OF THE COLON

*To the Editor of* THE LANCET

SIR,—In your issue of Oct. 29th (p. 940) Prof. Elliot Smith refers to a case exhibiting an anomalous pelvic colon which was found occupying the right side of the abdomen. As the condition appears to be of great rarity it may be of interest to record that only a few days before reading his communication I opened an abdomen by a grid-iron incision for appendicitis, and found the whole of the right iliac fossa occupied by a large loop of pelvic colon. The mesenteric attachment of the loop was well over to the right side of the middle line, whence it descended into the pelvis to join the rectum. I was at first tempted to believe that I had to deal with a transposition of the viscera. Further exploration, however, revealed the true state of affairs, the cæcum and offending appendix being found in the extreme right of the abdomen, separated by coils of small intestine from the abnormally situated pelvic colon.

I am, Sir, yours faithfully,

FRANK FORTY, F.R.C.S.,
Surgical Registrar, General Hospital, Birmingham.

Nov. 2nd, 1932.

## AUXILIARY TREATMENT OF TOXIC DIPHTHERIA

*To the Editor of* THE LANCET

SIR,—Dr. Woodcock, in her article on the auxiliary treatment of toxic diphtheria with glucose and insulin (THE LANCET, Oct. 22nd, p. 894), when speaking of blood-sugar estimations, writes: "Anything in the nature of a routine tolerance test was considered to be out of the question."

We desire to draw attention to the importance of controlling this treatment by repeated blood-sugar estimations. The adequate insulin dosage is often high, and such tests are obviously essential for the avoidance of hypoglycæmia and its attendant deterioration of the myocardium. We agree with Dr. Woodcock that repeated venepuncture is impossible, and it was for this reason that the method of Crecelius and Seifert was adopted by us. At no time did we fail to obtain 0·2 c.cm. of capillary blood from the lobe of the ear.

We believe that the degree of disorder of carbohydrate metabolism is directly dependent on the severity of toxæmia and, therefore, a blood-sugar curve performed as soon as a patient comes under treatment is of considerable assistance in the treatment and prognosis of the case. Further periodical consideration of the glucose-tolerance curve offers valuable information as to the progress of the patient.

We are, Sir, yours faithfully,

E. C. BENN,
F. HUGHES,
STANLEY ALSTEAD.

City Hospital, Little Bromwich, Birmingham, Nov. 1st, 1932.

*To the Editor of* THE LANCET

SIR,—I am glad to see from Dr. Woodcock's communication that the value of intravenous glucose treatment in diphtheria is being gradually appreciated. In her publication she combined it with insulin administration. From the work done in this hospital during the past three years we have come to the conclusion that the administration of insulin is not a necessary part of the treatment in all cases. Half of our bad cases have had no insulin and have done very well without. The essential part of the treatment is to procure a hyperglycæmia of some duration. Unless enough glucose is given to produce this, no effect is produced. No amount of glucose given by mouth or subcutaneously will effect any striking benefit, as it never reaches a high enough concentration in the blood. Our work has been based on the hypothesis that diphtheria toxin acts by reducing the negative potential of the colloid particles of the blood, thus tending to produce colloid flocculation. Glucose, being a reducing agent, might overcome this effect in high concentration. To prolong this effect we administer tincture of iodine, alkalis, and thyroid by mouth[1]; if glycosuria persists for more than six hours we then give insulin to stop it. This line of treatment was suggested by McDonagh's work.

Compared with the later results from Birmingham (with glucose and insulin only) our methods have given a greater reduction in the death-rate and a lower incidence of paralysis amongst the survivors. Since 1921 the type of diphtheria present in Bristol has been severe, so that the results given below for the last five years are comparable.

| | Total cases. | Deaths. | Case-mortality (per cent.). |
|---|---|---|---|
| Orthodox treatment, 1928–29 | 1235 | 67 | 5·4 |
| New treatment, 1930–32 .. | 2312 | 68 | 2·9 |

The second series of figures are the malignant "dangerously ill" cases extracted from each group. The intravenous treatment has been applied to this second group of cases only; the condition of the remainder of the 2312 did not warrant this treatment.

| | Dangerously ill cases. | Percentage of total admissions. | Deaths. | Case-mortality (per cent.). |
|---|---|---|---|---|
| Orthodox treatment, 1928–29 | 243 | 19 | 67 | 27·5 |
| New treatment, 1930–32 .. | 463 | 20 | 68 | 14·7 |

It will be seen that over a large series of cases, whether based on the total completed cases or the malignant cases, the death-rate was nearly halved. In our experience, if 90–120 c.cm. of 20 per cent. glucose and colloidal iodine is given on admission with intravenous antitoxin, with or without insulin, and followed by our other accessories, a second injection is rarely necessary. Over much interference with these desperately ill patients is to be deprecated. Too much glucose can be definitely harmful.

I am, Sir, yours faithfully,

B. A. PETERS, M.D.,
Medical Superintendent, Ham Green Hospital, Bristol.

Nov. 2nd, 1932.

## THROMBO-PHLEBITIS MIGRANS AND THROMBO-ANGIITIS OBLITERANS

*To the Editor of* THE LANCET

SIR,—The two interesting papers, by Dr. Walker and Dr. Kletz respectively, on Thrombo-phlebitis Migrans in your issue of Oct. 29th (pp. 936, 938) give the impression that this type of case was first described and named by Moorhead and Abrahamson in 1928, but in the *Mitt. a. d. Grenzgeb d. Med. u. Chir.* for 1909 (xix., 727) the subject of Springende

[1] See THE LANCET, 1930, ii., 579.

Thrombosen—that is to say, attacks of thrombosis springing or *migrating* from one place to another—was dealt with by Karl Försterling, who gave references to previous literature. In 1907 I consulted the late Sir A. Pearce Gould in regard to a typical sufferer of the kind because he had described a remarkable case in his Lettsomian lectures (*Trans. Med. Soc. Lond.*, 1902, xxv., 165); his patient "out of 25 years had spent no less than six years, two months, and one week invalided by these successive clottings." Pearce Gould, however, did not use the term "migrating" thrombosis or thrombo-phlebitis.

In a recent paper with Dr. E. Schwarz on Thrombophlebitis Migrans vel Recurrens (*Practitioner*, 1928, cxxviii., 421) I referred to a case associated with Buerger's disease (thrombo-angiitis obliterans), which I have observed at intervals since May, 1906.

The patient, a Russian Jew, now aged 66 years, came to England at the age of 25, and the symptoms of thrombo-angiitis obliterans commenced gradually at the age of 38, with intermittent claudication in the left leg. The disease progressed by exacerbations, both lower extremities and the right upper extremity becoming involved and besides the typical symptoms he suffered from attacks of superficial thrombo-phlebitis, notably of the cutaneous nodular type. Since 1924 there have been no active signs of the disease, but the patient has had slight attacks of gout, and has developed permanent high blood pressure.

When I first described this case in *The Lancet* for Jan. 18th, 1908 (p. 152) under the heading Arteritis Obliterans of the Lower Extremity (with references to other cases) Buerger had not yet published his first paper on the subject of thrombo-angiitis obliterans; the thrombo-phlebitis portion of the disease showed itself later on in this case. Buerger's first communication was to the New York Pathological Society in March, 1908, and in the *American Journal of Medical Sciences* for October, 1908 (cxxxvi., 567), he published another excellent study of the subject. Its association with "migrating thrombo-phlebitis" was specially considered by him in the *International Clinics* in 1909 (19th series, iii., 85) and in the *Journal of the American Medical Association* in the same year (1909, lii., 1319).

I am, Sir, yours faithfully,

London, W., Nov. 6th, 1932. F. PARKES WEBER.

## AMBULATORY TREATMENT OF LEG FRACTURES

*To the Editor of* THE LANCET

SIR,—In your issue of Nov. 5th (p. 1012) is an annotation describing my apparatus for the reduction of fractures of the shafts of the leg bones, and discussing the after-treatment which I employ. May I be allowed to avoid possible misconceptions by amplifying the statement that these cases are allowed to walk in plaster from the third week? This is only true of transverse fractures, completely reduced, and completely immobilised. In oblique and spiral fractures, weight-bearing is deferred until the sixth week. On the other hand in Pott-Dupuytren fractures weight is borne from the first day. No patient with a fracture of both leg bones is allowed early weight-bearing unless reduction is quite perfect. It is not enough that the alignment be perfect; there must also be accurate end-to-end apposition. If this condition is satisfied, any weight which may be borne through the tibia itself will merely impact the fragments, and if the plaster fits so closely that the fragments cannot angulate, they cannot over-ride.

The advantages of early weight-bearing are undoubted. Consolidation of the fracture is accelerated, muscle atrophy is avoided, adhesion formation is minimised, and the patient is less inconvenienced than by any alternative method of treatment. But unless the surgeon is entirely satisfied that no displacement remains, and that the plaster is so skilfully applied that the fragments cannot move within it, it would be better to avoid the luxury of early weight-bearing. The apparatus was designed primarily to facilitate perfect reduction by a conservative method. It may be that some surgeons are sufficiently expert not to require its assistance, but for the surgeon who finds these fractures difficult to reduce it is invaluable.

I am, Sir, yours faithfully,

Liverpool, Nov. 7th, 1932. R. WATSON JONES.

## TYPHOID IN YORKSHIRE

*To the Editor of* THE LANCET

SIR,—In your issue of Nov. 5th it was stated that a girl, a resident of Denby Dale, returned home after spending a holiday at Scarborough and that on a later date she was found to be suffering from typhoid fever. This came as a surprise to the people in Scarborough as there has been no case of typhoid contracted in this town. It is true that the Scarborough corporation came to the help of their neighbours, the Malton council, and received Malton patients in their sanatorium. Inquiries have been made and it has been found that the girl in question did not take her holidays in Scarborough but was a visitor to a village some miles distant from Scarborough, in an area which is not supplied by the corporation with water.

As the statement in your paper is liable to prejudice the reputation of Scarborough for a supply of wholesome water, I should be obliged if you would give publicity to this letter equal to that of the somewhat misleading (though I am sure not intentionally misleading) statement in your last issue.

I am, Sir, yours faithfully,

JUAN BUTLER,

Town Hall, Scarborough, Nov. 7th, 1932. Mayor.

## REACTIONS FOLLOWING TUMOUR IRRADIATION

*To the Editor of* THE LANCET

SIR,—The object of the following remarks is to draw attention to some statements in Dr. W. Cramer's paper, entitled Experimental Observations on the Therapeutic Action of Radium, in the Tenth Scientific Report of the Imperial Cancer Research Fund.[1] On p. 98 Dr. Cramer says:

"Several authors (Contamin, 1910; Wedd, Morson, and Russ, 1914) have suggested that a condition of immunity could be induced by inoculating a piece of tumour which had been irradiated 'in vitro' for a period sufficiently long to prevent its growth after inoculation, and that by this procedure it was possible to influence the growth of tumours which were already established. Wood and Prigosen (1915) have shown in a very extensive series of experiments involving several thousands of mice that such a claim could not be substantiated for transplanted tumours."

Dr. Cramer has written to us and explained that this reference (Wedd, Morson, and Russ) really refers to a paper published by us in THE LANCET in 1922.[2] This paper gave the details of experiments showing that not only can a condition of resistance to tumour implantations be set up in a rat by treating it with injections of irradiated tumour, but that an established tumour can be considerably hindered in its growth by similar treatment. Three years later Wood and

[1] THE LANCET, Oct. 15th, p. 860.
[2] Ibid., 1922, i., 212.

Prigosen undertook an investigation on similar lines with mice and failed to get any evidence of it. Dr. Cramer is adopting a novel method of scientific criticism in stating that the negative results of Wood and Prigosen mean that we cannot maintain the positive nature of our own results. Not a single criticism has been made against the technique by which we obtained these results, while negative findings may easily be due to lack of observance of the many points in technique which are essential if a positive result is to be obtained. We have, on several occasions, drawn attention to the fact that the response of animals to tumour inoculations depends on the nature of the material inoculated. An animal may become effectively protected against tumour growth or it may show the opposite effect, so that the tumour grows in it at a more rapid rate than in the normal animal. It is easy to point to factors which may bring about negative results, but it is surely unwarranted to set aside the positive so lightly. To illustrate the influence which the condition of the tumour has on its power to confer immunity we have made a table of data which have already been published in various journals, showing the extraordinary range of effect produced by inoculations of tumour cells depending on their treatment and condition at the time of inoculation. In three of these experiments rats have been given an inoculation of tumour tissue, afterwards they have been given a test inoculation at the same time as controls in order to find out what degree of immunity has been produced by the first inoculation.

TABLE

| | Units. |
|---|---|
| Volume of control tumours taken as .. .. .. .. | 100 |
| Volume of tumours in rats treated with irradiated rapidly growing tumours (lethal dose of radiation) .. | 7 |
| Volume of tumours in rats treated with irradiated tumours which had stopped growing but were not obviously necrotic (lethal dose of radiation) .. .. | 52 |
| In rats bearing two tumours, one being given a lethal dose of irradiation, volume of non-irradiated tumours compared with controls in untreated rats .. .. | 35 |
| Volume of tumours in rats treated with extract of autolysed tumour.. .. .. .. .. .. .. | 266 |

The dose of irradiation given to the tumour is of the greatest importance, as if it is not enough the tumour will grow, and if irradiated too long the tumour tissue loses its immunising properties.

Dr. Cramer states (p. 97) that:

"tumour strains which show spontaneous regression frequently, such as mouse carcinoma 206 or Jensen's rat sarcoma (J.R.S.), are utterly unsuited for radiotherapeutic experiments, and indeed for all therapeutic experiments.',

This is followed a little later on by an illustrative experiment which runs as follows:

"A rat is inoculated with a piece of J.R.S. The tumour grows progressively; ten days after the first inoculation a second inoculation is performed on the opposite side. This second inoculation is then negative, that is to say the animal has become 'immune.'"

Dr. Cramer's views of Jensen's rat sarcoma are those of many years ago, and do not take into account the progress which has been made in the technique of propagation of this tumour. In the early days inoculations were made with no particular care to ensure the most healthy condition of the tissue, and without knowledge of the many factors which influence results. The J.R.S. as we have it growing at the present time has many of the characteristics of a spontaneous tumour. Spontaneous absorption very rarely takes place, practically all the tumours grow progressively, metastases are common if the rat is allowed to live long enough, and successful treatment seems to depend upon the same factors as the treatment of cancer in man. We have found that when the tumours grow progressively the rats are not as a rule immune to a subsequent inoculation, in contrast to Dr. Cramer's statement; perhaps our criterion for "progressive" growth is different from that of Dr. Cramer.

It is curious to find that Dr. Cramer thinks this tumour of no value for therapeutic investigation, in view of the fact that the technique adopted for the treatment of uterine cancer at the Marie Curie Hospital has made use of the experimental investigations on the lethal action of radium on this tumour. This clinic has systematically published its results, and how far its attempts to modify the technique, on the lines suggested by laboratory investigations, have been justified may be seen by reference to the last radium report of the Medical Research Council.[3]

The greater part of Dr. Cramer's article is concerned with the effects of radium irradiation upon tumour behaviour. He does not seem to recognise that the results of irradiating living structures depend almost entirely upon the dosage employed, the term "dosage" including not only the quantity of energy liberated and the way in which it is liberated, but also the type of radiation used. It sounds almost commonplace to say that all living tissues can be damaged by radiation to the extent of complete necrosis if enough radiation is applied. The whole subject is bound up with the question of dosage, and Dr. Cramer gives very few details of this very important side of his investigation, and yet he does not refrain from ex-cathedra statements on the subject. On p. 97 he says, with reference to his own experiments on the irradiation of a tumour, "these experiments represent the most favourable conditions for the demonstration of any general therapeutic action of radium, if such an action existed." In order to find the most favourable conditions it would certainly be necessary to work over a very large range of radiological variations, but we find no evidence that he has done this, and in fact he cites an experiment with a radium capsule which he considers to be on the most favourable lines, which we should feel inclined to condemn on many technical counts. Dr. Cramer attempts to irradiate a tumour in the mouse by applying to its surface a radium capsule containing about 58 mg. of radium and screened by 0·18 mm. of silver. Most of the effects would be due to the beta rays and these are rapidly absorbed in going from layer to layer, so that there would be very big variations in the dose given to the tumour cells in the various parts of the tumour.

Finally Dr. Cramer gives the details of certain experiments contrasting the effects of in-vitro and in-vivo doses on tumours. These can quite easily be reconciled with the experimental fact that was shown in a publication in the *British Journal of Radiology* five years ago,[4] that the growth of a tumour is profoundly influenced by irradiation of the tissues in which it is growing, even when the tumour itself is not irradiated.

The evidence seems to us conclusive that in the case of transplanted tumours in rats the absorption of tumour tissue can lead to the development of an acquired immunity, and this can affect an established tumour and it persists throughout the animal's life. Radiation is one method of causing the absorption of tumour tissue.

The fact that most cases of untreated cancer in man die of the disease and only show a temporary and varying resistance to the progress of the growth,

[3] Special Report Series No. 174.

[4] The Growth of Tumour in Tissues Exposed to X Rays and Radium, Brit. Jour. Rad. (B.J.R. Sect.), 1927, xxxii., 289.

and the fact that many cases treated by radiation continue to have progressive growth of distant metastases, does not prove that immunity to cancer cannot occur and that no practical value can result from a study of the subject. Actually we have no means of determining whether the numerous cases of advanced cancer cured by radiation, vide 10 years' statistics of such clinics as Radiumhemmet and the Fondation Curie, ever had distant metastases or not. We are not of Dr. Cramer's opinion that the subject of immunity to cancer is solved by negative observations, and we think future progress on this subject is closely linked up with experimental work upon tumours in animals such as the Jensen rat sarcoma, which not only shows at the present time most of the characteristics of a spontaneous new growth but also can be made to produce an effective and lasting immunity in the most sensitive stock.

We are, Sir, yours faithfully,

H. CHAMBERS,
G. M. SCOTT,
S. RUSS.

Barnato Joel Laboratories, Middlesex Hospital, W., Nov. 8th, 1932.

THE POLICY OF SCHOOL CLOSURE.—With reference to the letter with this title from Dr. W. Dunn, medical officer to Uppingham School, which appeared in THE LANCET last week, it has been pointed out to us that the official statement of the Ministry of Health on the subject in no way challenged or questioned the competence or authority of headmasters and school medical officers to make decisions as to the closure or non-closure of their own schools. An official account of the Broadstairs epidemic, of which Dr. Dunn required a report, appeared in the annual report of the chief medical officer of the Ministry of Health in 1926.

## A STUDENTS' HOSTEL

Two years ago an appeal was made for money to build a hostel for students of the London Hospital. It is strongly felt by the hospital staff that medical students ought to have the chance of enjoying "something comparable to the life of Oxford and Cambridge colleges," and the London has hitherto been able to offer hostel accommodation to a small number.

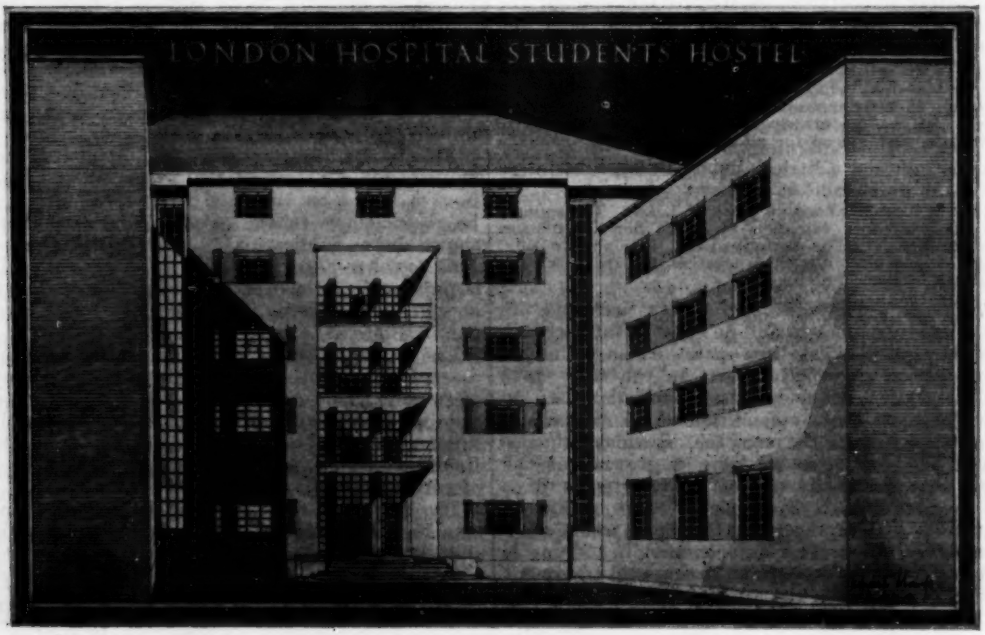
Since the first appeal was issued the sum of £10,000 in cash and promises has been raised. Of this, £4000 has been subscribed by members of the staff and other old London Hospital men; £2000 was obtained through an old London Hospital man in general practice, who was consulted about the disposal of a trust fund; £3000 has been voted towards the scheme by the house committee, from the Knutsford memorial fund; and £1000 has just been contributed by Sir Evan Spicer, a member of that committee. For the new building described below a total of £23,000 is required, without allowing for furniture or decorations; but it has been decided to proceed at once with the building of the north wing, which will contain the dining-hall, library, and kitchen, and a number of rooms for staff accommodation.

The site is an admirable one in Philpot-street, a wide street behind the hospital. The hostel itself has been planned on simple and straightforward lines. On the ground floor one enters into a hall with the common-room on one side and the dining-room on the other. Beyond the common-room there is the library in a quiet position for study, and beyond the dining-room is the servery and the kitchen offices. The hall itself gives direct access to a small garden facing east.

The staircases are on the two internal angles of the building, giving access to the 55 bed sitting-rooms for students. Care is being taken that these shall be simple, quiet, comfortable rooms. There is an ample supply of baths and lavatories on each floor. Special accommodation has been made for the warden and also for the matron. The kitchen and staff quarters are shut off by a door from the rest of the building on each floor. The plan has been so arranged that extensions in the future could be made with the least possible disturbance.

Externally the building will be in brick in harmony with its neighbours, but its design is particularly direct and modern in spirit, relying on good proportion, materials, and workmanship rather than ornament. The architect is Mr. Edward Maufe, F.R.I.B.A.

The hon. secretary of the hostel committee is Dr. A. E. Clark-Kennedy.



# MEDICAL NEWS

## University of Oxford

The Radcliffe prize, which will again be awarded in 1933, is of the value of £50, and is awarded by the Master and Fellows of University College, for research in any branch of the medical sciences.

It is open to all graduates of the university who have taken, or are taking, a medical degree in the university, and who have taken the degree of bachelor of arts within the last 12 years. Candidates must send in their names to the Secretary of Faculties, University Registry, Oxford, on or before Dec. 1st, 1932.

An examination will take place on Saturday, Nov. 26th, at 4 P.M., in the department of physiology, for the Francis Gotch memorial prize. Candidates should send in their names and qualifications to the board of management, department of physiology, Oxford, not later than Saturday, Nov. 19th.

The next award of the Rolleston memorial prize, which is now of the value of about £100, will be in Trinity term 1934.

It is granted for a piece of original research in one of the following: animal and vegetable morphology, physiology and pathology, and anthropology. Memoirs already published are admitted to the competition. Candidates should be graduates or research students of Oxford or Cambridge of not more than six years standing, and within ten years of matriculation.

## University of Cambridge

On Nov. 5th the following degrees were conferred:—

*M.D.*—M. C. Andrews and J. H. B. Martin.
*M.B. and B.Chir.*—J. F. Varley.
*M.B.*—D. B. Cater.
*B.Chir.*—*J. W Bromley, J. O. Poynton, and O. S. Tubbs.

* By proxy.

## English Conjoint Examining Board

At the Final Examination, held from Oct. 3rd to 26th, the following candidates were approved in the subjects indicated below, but are not yet eligible for diplomas:—

*Medicine.*—F. C. Abeyesekera, Ceylon and King's Coll.; I. G. Anderson, King's Coll.; G. Barasi, St. Bart.'s; R. Bennett, St. Bart.'s; J. G. Bentley, St. Bart.'s; H. W. Burge, King's Coll.; N. Chakravarty, St. Bart.'s; D. D. Coleman, Charing Cross; Patience Craig, Manchester; C. J. Evans, Guy's; R. M. Farrington, Cardiff; H. C. A. Harris, Camb. and St. Thomas's; R. V. Harris, St. Bart.'s; P. G. F. Harvey, St. Bart.'s; A. J. Helfet, Liverpool; G. A. H. Herbert, London; E. C. Herten-Greaven, Camb. and London; J. H. Hudson, Leeds; W. R. S. Hutchinson, Camb. and St. Thomas's; Grace M. Jones, Cardiff; F. B. Khambatta, Bombay; B. H. Kirman, King's Coll.; S. B. Levy, Liverpool; M. B. Lindsay, St. Thomas's; M. J. McCormack, London; K. R. Masani, Univ. Coll.; K. M. A. Perry, Camb. and London; A. G. Potts, Guy's; J. D. Powell, Camb. and St. Bart.'s; W. L. Price, Birmingham; P. B. Rao, Madras and London; Winifred H. Redmond, King's Coll.; A. H. W. Roffey, King's Coll.; B. Samuel, Cardiff; H. S. Shoham, Univ. Coll.; G. S. Steele-Perkins, Camb. and Guy's; S. Sutton, Manchester; T. V. Tattersall, Camb. and Manchester; R. E. S. Turner, Oxford and St. Bart.'s; J. R. Vaid, Punjab and St. Bart.'s; S. P. Wanchoo, Middlesex; G. L. Ward, Camb. and St. George's; A. G. M. Weddell, St. Bart.'s; E. E. S. Wheatley, St. Thomas's; W. H. Whiles, King's Coll.; D. Whittaker, Camb. and St. Thomas's; I. Whittington, St. George's; and C. W. Wollaston, St. Thomas's.

*Surgery.*—P. H. Addison, St. Mary's; I. B. Asafu-Adjaye, Univ. Coll.; W. O. Baird, L.D.S. Eng., Middlesex; G. E. M. Benson, Oxford and St. Thomas's; M. J. Boering, London; A. R. Boney, St. Bart.'s; D. J. T. Brinkworth, Middlesex; Jean W. D. Calman, Univ. Coll.; H. R. Cara, Liverpool; B. S. Carter, St. Thomas's; A. J. P. Coetzee, L.M.S.S.A. Lond., London; M. M. Cohen, Manchester; D. D. Coleman, Charing Cross; Esther Copperman, Univ. Coll.; A. G. Cross, Camb. and St. Mary's; T. J. Davies, Cardiff and London; H. De, St. George's; C. B. Dharmasena, Ceylon and St. Bart.'s; A. G. Donald, Guy's; J. F. H. Eagles, Bristol; G. J. Evans, Guy's; J. C. G. Evans, St. Thomas's; L. H. Evelyn, Guy's; E. D. Falconer, Guy's; T. Fichardt, Guy's; N. W. Gardener, Guy's; P. H. R. Ghey, Camb. and St. Bart.'s; P. R. Goodfellow, Camb. and Manchester; P. P. Halemani, Bombay and Middlesex; J. L. Hamilton-Paterson, Univ. Coll.; G. L. Hardman, Camb. and St. George's; T. T. Hardy, Oxford and St. Thomas's; B. A. E. Harley, Middlesex; H. R. Hartnell, London; C. A. Hodges, St. Thomas's; W. H. Hughes, St. Mary's; H. V. D. Iles, Guy's; L. G. Irvine, Camb. and London; N. E. Jones, Cardiff; F. R. Kilpatrick, Guy's; A. H. Knowles, Camb. and St. Thomas's; S. B. Lavine, Middlesex; J. A. E. Lawn, St. Bart.'s; F. X. Letellier, Univ. Coll.; R. M. Littledale, Middlesex; A. E. Locke, Guy's; B. McArdle, Guy's; D. P. McCoy, Camb. and St. Bart.'s; J. O. McDonagh, Univ. Coll.; A. B. MacGregor, Camb. and St. Mary's; Rosamund M. I. Mackay, Univ. Coll.; J. P. Mackenzie, Univ. Coll.; J. D. P. Macpherson, St. Thomas's; C. R. Mayou, Birmingham; S. F. Mitchell, Univ. Coll.; M. P. Morel, Camb. and St. Bart.'s; G. R. Morgan, St. Bart.'s; H. J. V. Morton, Camb. and St. Thomas's; J. B. C. Murdoch, Camb. and Guy's; L. R. Norsworthy, St. Bart.'s; R. M. M. C. Orpwood, St. Bart.'s; J. P. O'Shea, Guy's; A. G. Palin, Oxford and St. Thomas's; P. S. Patuck, Univ. Coll.; B. J. Philbin, Manchester; G. Phipps, St. Thomas's; L. E. J. Poulier, Ceylon and St. George's; F. W. Roberts, Middlesex; J. R. Robertson, Oxford and St. Bart.'s; R. D. Roper, Camb. and St. Bart.'s; G. E. Scott, Oxford and St. Thomas's; G. H. Shaw, Camb. and St. Thomas's; B. W. Smith, Guy's; G. H. Stuart, Univ. Coll.; S. Sutton, Manchester; F. W. Thomas, Cardiff; W. E. Thomas, Cardiff; J. L. Treneman, Liverpool; G. L. Ward, Camb. and St. George's; C. J. T. Watson, Camb. and St. George's; J. Wilson, Camb. and St. Bart.'s; C. W. B. Woodham, St. Bart.'s; E. J. S. Woolley, St. George's; R. F. Woolmer, St. Thomas's; Freida Yarmalinsky, Univ. Coll.; and C. H. Yeoh, Oxford and St. Thomas's.

*Midwifery.*—G. Abbey, Leeds; J. S. Adamson, Bristol; G. G. Airey, St. Mary's; R. M. H. Anning, St. Mary's; J. E. M. Ayoub, Oxford and St. Thomas's; T. A. Baldwin, Univ. Coll.; G. A. Barker, King's Coll.; G. F. Barran, Camb. and St. George's; H. R. Bathurst-Norman, Oxford and St. Thomas's; A. A. W. Beach, L.D.S. Eng., Birmingham; N. B. Betts, Camb. and St. Thomas's; A. Birnbaum, London; M. J. Boering, London; R. Bolton, Univ. Coll.; F. J. Brice, London; R. E. Browne, King's Coll.; E. G. L. Bywaters, Middlesex; W. A. Cannell, L.D.S. Eng., Charing Cross; J. P. Child, Oxford and St. Thomas's; R. D. Clay, King's Coll.; M. M. Cohen, Manchester; J. H. Coles, King's Coll.; R. E. C. Copithorne, Middlesex; Esther Copperman, Univ. Coll.; L. Z. Cosin, Guy's; S. W. Croome, King's Coll.; H. T. Croudace, Guy's; E. M. Darmady, Camb. and St. Bart.'s; Hilda M. S. Davidson, King's Coll.; H. H. Davies, St. Bart.'s; T. J. Davies, Cardiff and London; W. A. Dawes, Camb. and St. Thomas's; C. E. M. De Gruchy, Guy's; W. J. B. De Gruchy, Camb. and St. Thomas's; C. B. Dharmasena, Ceylon and St. Bart.'s; M. E. Disney, London; R. J. Drummond, Guy's; Katharine E. M. Dunne, Camb. and Leeds; O. G. Edholm, St. George's; J. J. A. Embleton, St. Mary's; A. B. Evans, Camb. and Westminster; G. J. Evans, Guy's; S. T. Falla, London; R. G. Fear, St. Bart.'s; E. Fernandes, King's Coll.; H. C. Fletcher-Jones, Westminster; J. M. Flower, Westminster; J. F. Foulkes, Liverpool; D. L. Fromow, London; Violet Fry, Bristol; C. M. Fysh, St. Thomas's; M. K. Gadgil, Bombay; N. W. Gardener, Guy's; W. L. George, St. Mary's; A. B. F. Gibson, Camb. and St. Thomas's; M. S. Good, Oxford and St. George's; P. R. Goodfellow, Camb. and Manchester; G. B. Grayling, St. George's; T. F. Greenwood, Middlesex; T. F. R. Griffin, St. Mary's; P. P. Halemani, Bombay and Middlesex; C. V. Harries, L.D.S. Eng., Guy's; V. E. L. Hart, London; H. R. Hartnell, London; N. H. Harwood-Yarred, Camb. and St. Thomas's; S. A. Hasan, Punjab; A. J. Helfet, Liverpool; C. V. A. Henriques, King's Coll.; H. C. H. Higginson, St. Bart.'s; R. Hill, Camb. and London; Winifred M. Hill, Bristol; J. M. Holford, Camb. and St. George's; J. R. Hughes, Middlesex; M. I. A. Hunter, Camb. and St. George's; M. J. Ingram, Camb. and St. George's; L. G. Irvine, Camb. and London; E. R. James, St. Mary's; A. D. Jones, Bristol; A. E. Jones, Guy's; G. F. Jones, St. Mary's; S. O. Jones, King's Coll.; T. C. Keble, St. Mary's; A. Kekwick, Camb. and Middlesex; F. W. H. Kent, King's Coll.; G. E. Kerr, King's Coll.; R. L. Kerr, Camb. and St. Mary's; A. B. King, Univ. Coll.; B. H. Kirman, King's Coll.; Beatrice Lewis, Univ. Coll.; R. I. Lewis, Cardiff and London; M. J. Lindsey, Guy's; Louisa A. Loder, King's Coll.; K. Lumsden, Camb. and St. Bart.'s; W. S. McKenzie, Camb. and Middlesex; Catherine B. Mackinlay, King's Coll.; R. A. McMillan, Middlesex; T. C. Maling, Camb. and St. Thomas's; G. J. H. Maud, Camb. and Univ. Coll.; J. W. Maycock, Camb. and Middlesex; A. Miller, Camb. and St. George's; C. B. Miller, King's Coll.; P. J. W. Milligan, Oxford and St. Thomas's; N. H. M. R. Monro, Westminster; M. P. Morel, Camb. and St. Bart.'s; J. A. W. Musson, Middlesex; W. F. Nicholson, Camb. and Manchester; L. C. Oliver, Guy's; P. S. Patuck, Univ. Coll.; H. E. S. Pearson, St. Thomas's; R. C. Percival, London; K. M. A. Perry, Camb. and London; A. K. Price, St. Thomas's; W. L. Price, Birmingham; S. A. Propert, Camb. and St. Thomas's; R. Ram, Durham; J. Rosenbaum, St. Bart.'s; M. A. Rugg-Gunn, St. George's; R. T. Rushton, Leeds; H. P. Russell, Guy's; M. F. P. Ryan, King's Coll.; D. Saklatvala, Univ. Coll.; A. G. Salaman, Camb. and London; G. H. Saunders, Middlesex; P. R. Saville, London; G. R. Sedleigh-Denfield, St. Bart.'s; R. Shackman, St. Bart.'s; J. V. Shemilt, St. Thomas's; P. P. Sheth, Bombay and Middlesex; J. Shields, Camb. and St. Bart.'s; H. S. Shoham, Univ. Coll.; G. L. B. A. Silva, Middlesex; R. T. Simcox, St. Bart.'s; T. W. Smalles, Camb. and Leeds; E. J. Smith, King's Coll.; J. T. W. Spiridion-Kliszczewski, Camb. and Westminster; J. A. Squire, St. Bart.'s; L. J. Stoll, Guy's; V. A. J. Swain, St. Bart.'s; E. W. Taylor, Camb. and St. George's; B. A. Thomas, St. Bart.'s; R. C. P. Thomas, St. Mary's; G. E. H. Tisdall, Camb. and St. Thomas's; W. H. D. Trubshaw, St. Bart.'s; J. R. Vaid, St. Bart.'s; G. E. Walker, Camb. and Guy's; M. Walt, Guy's; T. P. Ward, Camb. and St. Thomas's; G. I. Watson, Camb. and St. Thomas's; P. J. Wenger-Byrne, Camb. and St. George's; F. E. Wheeler, St. Bart.'s; C. J. G. White, Camb. and Middlesex; M. R. P. Williams, Cardiff; J. C. Winteler, King's Coll.; Freida Yarmalinsky, Univ. Coll.; and E. C. Zorab, Guy's.

*Pathology.*—E. H. Allen, Camb. and St. George's; D. R. Ashton, St. Bart.'s; K. G. Awati, Bombay and Royal Free; J. S. Bailey, Camb. and St. Bart.'s; T. A. Baldwin, Univ. Coll.; G. A. Barker, King's Coll.; G. F. Barran, Camb. and St. George's; W. T. C. Berry, Camb. and St. Bart.'s; A. Birnbaum, London; Joan C. D. Bolt, Royal Free; R. Bolton, Univ. Coll.; W. A. Bowdler, St. Thomas's; W. D. Bower, Camb. and St. Thomas's; Muriel Boycott, Univ Coll.; F. J. Brice, London; Jean W. D. Calman, Univ. Coll.; W. R. Cambridge, Bristol; R. H. Carpenter, St. Bart.'s; H. F. Chard, St. Thomas's; A. H. Charles, Camb. and St. George's; H. O. Clayton, Manchester; D. M. Cooper, St. Thomas's; R. E. C. Copithorne, Middlesex; J. E. Davenport, Camb. and London; T. J. Davies, Cardiff and London; E. J. Dennison, St. Thomas's; D. P. Dewe, Bristol; P. E. Dipple, St. Bart.'s; M. E. Disney,

London; W. L. Dove, Liverpool; O. G. Edholm, St. George's; L. R. L. Edwards, Guy's; J. J. A. Embleton, Camb. and St. Mary's; A. B. Evans, Camb. and Westminster; C. J. Evans, Guy's; Helen M. Evans, Royal Free; P. R. Evans, Manchester; E. H. Evison, Manchester; S. T. Falla, London; R. M. Farrington, Cardiff; R. G. Fear, St. Bart.'s; S. Y. Feggetter, Durham; H. C. Fletcher-Jones, Westminster; J. F. Foulkes, Liverpool; J. H. Garnett, Manchester; P. H. R. Ghey, Camb. and St. Bart.'s; C. L. Greening, Durham; T. F. R. Griffin, St. Mary's; J. Grocott, Guy's; J. G. Hallwood, Liverpool; E. H. C. Harper, St. Thomas's; H. C. A. Harris, Camb. and St. Thomas's; J. D. Hay, Camb. and Liverpool; A. Hemming, Birmingham; S. Henderson, Liverpool; H. C. H. Higginson, St. Bart.'s; R. Hill, Camb. and London; C. E. W. Hoar, Westminster; J. A. C. Hunter, Guy's; W. R. Hunter, Liverpool; G. H. James, Birmingham; J. W. James, Univ. Coll.; Margaret H. James, Univ. Coll.; R. G. James, King's Coll.; H. G. John, Univ. Coll.; N. H. Jones, St. Bart.'s; J. B. Jordaan, Guy's; N. K. Kai, Univ. Coll.; A. Kekwick, Camb. and Middlesex; F. W. H. Kent, King's Coll.; H. B. D. Kettlewell, Camb. and St. Bart.'s; A. B. King, Univ. Coll.; E. H. P. Lassen, King's Coll.; M. Lee, St. Thomas's; A. G. Leigh, Liverpool; L. G. MacKenzie, Guy's; W. S. MacKenzie, Camb. and Middlesex; G. A. Mais, St. Thomas's; G. S. Malvai, Durham; W. N. M. Mason, Liverpool; J. W. Maycock, Camb. and Middlesex; C. B. Miller, King's Coll.; S. F. Mitchell, Univ. Coll.; Mildred A. Morgan, Cardiff; H. Mower, St. George's; W. F. Nicholson, Camb. and Manchester; Josie M. Oldfield, Royal Free; Emma D. N. Part, Birmingham; E. Pereira, St. George's; M. L. Platt, Middlesex; Margaret H. Prentice, Manchester; A. U. Prodhan, Calcutta and Univ. Coll.; I. G. Robin, Camb. and Guy's; K. Robson, Camb. and Middlesex; Helen E. Rogerson, Manchester; R. D. Rowlands, Univ. Coll.; R. T. Rushton, Leeds; H. P. Russell, Guy's; T. Seager, Liverpool; A. Shatz, Cardiff; Freni M. Shaw, Royal Free; D. W. Smithers, Camb. and St. Thomas's; J. A. Squire, St. Bart.'s; P. G. Stainton, Guy's; W. P. Stevens, Birmingham; B. A. Thomas, St. Bart.'s; D. M. Thomson, St. Bart.'s; E. R. van Langenberg, St. Bart.'s; C. E. M. Ware, St. Bart.'s; R. A. L. Wenger, Camb. and St. Bart.'s; P. R. Wheatley, Guy's; A. Willcox, Camb. and Middlesex; M. R. P. Williams, Cardiff; W. Wilson, Manchester; J. C. Winteler, King's Coll.; A. R. Woodforde, St. Bart.'s; L. S. F. Woodhead, Westminster; C. W. Wollaston, St. Thomas's; and I. Zieve, Guy's.

In the list of new members of the Royal College of Physicians of London appearing in our last issue, Dr. J. A. B. Young's degree should have been given as M.D. Edin.

## Royal College of Surgeons of Edinburgh

The following candidates, having passed the final dental examinations, have been granted the diploma of L.D.S. R.C.S. Edin.:—

Kheng-San Oon, Frank Briggs, N. W. Nisbet, Frank Pinkerton, T. C. Martin, T. R. Murphy, A. E. B. Noble, Anna Golden, Patrick Goggins, and C. R. H. Fenton.

## Royal College of Physicians of Edinburgh

A quarterly meeting of the College was held on Nov. 1st, with Dr. Robert Thin, the president, in the chair. Dr. Alec Bache Walker (Newtongrange) and Dr. Derrick Melville Dunlop (Edinburgh) were introduced and took their seats as Fellows. Dr. Ion Simson Hall (Edinburgh) and Dr. Jamiat Singh (Lahore) were elected to the Fellowship. The Hill Pattison-Struthers bursary in anatomy and physiology was awarded to Robert Oswald Walker. Dr. Robert A. Fleming was appointed Morison lecturer for 1933.

## Joint Tuberculosis Council

At the October meeting of the council, Dr. Brand said that the summer post-graduate course, held in Hamburg, Stettin, and Berlin, had been attended by 11 members. In December, a course lasting a week would be held at the Brompton Hospital, when attention would be directed to operative procedures in addition to artificial pneumothorax and lipiodol. Some continental workers may attend this course. Dr. R. R. Trail reported, on behalf of a committee including Dr. S. Vere Pearson, Dr. G. Jessel, Dr. Brand, Dr. D. P. Sutherland, Dr. James Watt, Dr. C. O. Hawthorne and Dr. Peter Edwards, that individual members had gone over the published results of artificial pneumothorax treatment but found no basis for comparison of results. It had been decided to draw up criteria on which to base a results return in this country, and to ask all institutions to supply their results up to the end of 1932.

## University of Liverpool

Mr. A. Leyland Robinson, F.R.C.S., has been appointed professor of obstetrics and gynæcology in the university, in succession to the late Prof. H. Leith Murray.

Mr. Robinson, who received his medical education at the University of Liverpool and University College, London, has hitherto been lecturer in obstetrics and gynæcology in the university. He is honorary gynæcological surgeon to the Royal Southern Hospital, Liverpool, and honorary surgeon to the Hospital for Women.

The title of professor emeritus has been conferred upon Dr. J. S. Macdonald, F.R.S., Holt professor of physiology from 1914 until this year.

## University of London

Dr. A. M. H. Gray, dean of University College Hospital medical school, has been elected dean of the medical faculty of the university for 1932–34. Mr. William Wallace, M.D., has been elected dean of the faculty of music.

Sir Charles Sherrington will give the first of two lectures on Reflex Action at University College, Gower-street, W.C., on Nov. 17th, at 5.30 P.M. The second lecture will not take place on the 24th, as announced in our last issue, but has been postponed until next term.

Mr. J. A. Hewitt, D.Sc., will give four lectures on the Influence of Ductless Glands on Metabolism, at King's College, Strand, W.C., at 5 P.M., on Thursdays from Nov. 10th to Dec. 1st.

## University of Bristol

A dissertation by Dr. Ronald Melville Norman has been approved for the degree of M.D.

## University of Durham

At the College of Medicine, Newcastle-upon-Tyne, on Friday, Nov. 25th, at 4.45 P.M., Dr. E. D. Adrian, F.R.S., Foulerton professor of the Royal Society, will deliver the third of a series of lectures on Recent Advances in Physiology Applicable to Medicine. His subject will be the Sensory Control of Respiration and of the Heart Beat. Medical practitioners are invited to attend.

## Fellowship of Medicine and Post-Graduate Medical Association

A course of six lecture-demonstrations on the Diagnosis and Treatment of Chronic Rheumatism will be held at the British Red Cross Clinic for Rheumatism, Peto-place, London, N.W., from Nov. 22nd to Dec. 8th, on Tuesdays and Thursdays at 8.30 P.M. Mr. R. Lindsay Rea will give a demonstration on the Fundus Oculi on Tuesday, Nov. 22nd, at 8.30 P.M., at the in-patient department of the West-End Hospital for Nervous Diseases, Gloucester-gate, N.W. There will be a course in proctology at St. Mark's Hospital, City-road, E.C., from Nov. 21st to 26th. There are vacancies for two clinical assistants each month (men only) at the Lambeth Hospital, Brook-street, S.E. Further details may be had from the secretary of the Fellowship at 1, Wimpole-street, W.1.

## Princess Elizabeth of York Hospital

With the sanction of the King the East London Hospital for Children, Shadwell, London, E., has changed its name to Princess Elizabeth of York Hospital for Children.

## Harveian Society of London

Last June the Harveian Society of London held their 101st annual banquet, which is now known as the Buckston Browne dinner, because of the kindness of Sir George Buckston Browne in providing the society with a sum of money which enables the members to dine together. The president, Mr. Cecil P. G. Wakeley, reminded the members and guests that Sir Buckston Browne had instituted the dinner in memory of his only son, Lieut.-Colonel George Buckston Browne, D.S.O., a very gallant officer who was killed in the war. Lord Riddell, who was the principal guest at the banquet, proposing the toast of the society in his ever happy manner, said that he was moved by the generosity of Sir Buckston to present the society with a loving cup to be used at the annual Buckston Browne dinner. This cup has now been received by the society. It consists of a cup of plain George III. form, with flanched rim and three scroll handles, with leaf terminations, 13 in. high, gilt and standing on a plinth of art green wood. On one side of the cup is an engraved portrait of Harvey, while on the other side the names of the donor, the president, Mr. Wakeley, and the treasurer, Dr. Godfrey de Bec Turtle, are engraved. The cup was made, and the engraving executed by Messrs. J. W. Benson, Ltd., Ludgate-hill, E.C.

### Irish Medical Schools and Graduates' Association

The annual dinner of this association will take place at the Dorchester Hotel, London, W., on Nov. 24th, Dr. F. Howard Humphris presiding.

### Aberdeen University Club, London

The eighty-eighth half-yearly dinner of this club will be held at the Trocadero Restaurant, London, at 7 for 7.30 P.M., on Thursday, Nov. 24th, Prof. R. G. McKerron, M.D., presiding. The hon. secretary's address is 9, Addison-gardens, W.14.

### Glasgow University Club, London

This club will dine at the Trocadero Restaurant, W., on Friday, Dec. 2nd, at 7.15 P.M., for 7.30 P.M. Emeritus Professor D. J. Medley, will be in the chair. Any Glasgow University men who, though not members of the club, desire to attend, are requested to communicate with the hon. secretaries, 62, Harley House, N.W.1.

### Medical Officers of Schools Association

A meeting of this society will be held at 11, Chandos-street, London, W., on Friday, Nov. 25th, at 5 P.M. A discussion on Mouth-breathing and Nasal Obstruction will be opened by Mr. Warwick James and Mr. Somerville Hastings.

### Eugenics Society

A meeting of this society will be held on Tuesday, Nov. 15th, at 5.30 P.M., at the rooms of the Linnean Society, Burlington House, Piccadilly, London, W. Mr. H. V. Carrington, hon. secretary of the Marriage Law Reform League, will speak on Urgent Reasons for Marriage Law Reform. All interested are invited to attend.

### Cecil Houses

On Friday, Nov. 18th at 3 P.M., a meeting will be held at the Cambridge Theatre in support of the Cecil Houses (Women's Public Lodging House Fund). The speakers will include Miss Sheila Kaye Smith, Mr. J. B. Priestley, and Mr. Louis Golding. Tickets may be had free on application to Mrs. Cecil Chesterton, hon. organising secretary, 11, Golden-square, London, W.1.

### Royal Medico-Psychological Association

The next quarterly meeting of this association will be held at 2 P.M., on Tuesday, Nov. 22nd, at 11, Chandos-street, London, W., with Dr. R. B. Campbell, the president, in the chair. At 3 P.M. the thirteenth Maudsley lecture will be given by Sir Farquhar Buzzard, who will speak on Education in Medicine. The lecture will be delivered in the Barnes Hall of the Royal Society of Medicine, 1, Wimpole-street, W.

### Society of Medical Officers of Health

At a meeting of this society at 1, Upper Montague-street, Russell-square, London, W.C., at 5 P.M., on Friday, Nov. 18th, Dr. A. S. M. Macgregor, medical officer of health for Glasgow, will open a discussion on Some Epidemiological Features of the Pneumococcus and its Types.

The annual dinner will take place at the Hotel Victoria, Northumberland-avenue, London, W.C., on Thursday, Nov. 17th, at 7.30 P.M. Sir John Simon will be the principal guest.

### Medico-Chirurgical Society of Edinburgh

The following are the office-bearers of this society for the coming year:—President: Mr. George L. Chiene. Vice-presidents: Dr. John M. Bowie, Dr. A. H. H. Sinclair, and Dr. William Fordyce. Councillors: Dr. Lewis Thatcher, Dr. Douglas Guthrie, Dr. T. W. E. Ross, Dr. H. L. Watson Wemyss, Dr. John D. Comrie, Dr. W. F. T. Haultain, Dr. Murray Wood, and Mr. F. E. Jardine. Treasurer: Dr. John Orr. Secretaries: Dr. W. A. Alexander and Mr. W. Q. Wood. Editor of Transactions: Dr. Fergus Hewat.

### Jewish Health Organisation of Great Britain

This organisation, whose address is 19, Dorset-square, London, N.W. 1, is holding its tenth annual series of popular lectures on health subjects at the Whitechapel Art Gallery, High-street, Whitechapel, E., at 8.30 P.M., on Saturdays from Nov. 19th to Jan. 14th (except Dec. 24th). The speakers will be Dr. Israel Feldman, on Physical Fitness; Dr. A. Salusbury MacNalty, on the Work of the Ministry of Health; Dr. J. N. Dobbie, on the Health Work of the London County Council; Dr. Julia Browne, on the Health Work of the Borough Council; Dr. J. H. Harley Williams, on Voluntary Health Work; Mr. E. van Noorden, on Oral Hygiene; Dr. R. Levinson, on Mental Hygiene; and Dr. Y. Krupenia, on the Work of the Jewish Health Organisation of Great Britain. Dr. W. J. O'Donovan, M.P., will preside at the inaugural lecture on Nov. 19th.

### Public Health Congress and Exhibition

Sir Hilton Young, the Minister of Health, will open this exhibition at the Royal Agricultural Hall, London, N., next Monday, Nov. 14th, at 11.55 A.M. At a meeting on Tuesday, at 11 A.M., Dr. H. A. des Voeux will speak on Smoke Abatement and Public Health, and Dr. J. S. Owens on Fumes Emission from Road Vehicles. In the afternoon there will be a discussion on the Scope, Uses, and Abuses of Infant Welfare Centres, the speakers including Dr. Eric Pritchard, Sir Henry Brackenbury, and Dr. H. W. Pooler. Other subjects and speakers will include the relationship of hygiene to changes in disease (Dr. J. Browning Alexander), occupational therapy in mental hospitals (Lieut.-Colonel C. F. de Salis), industries in mental deficiency institutions (Mr. L. G. Brock), health and housing (Dr. C. K. Millard), the contributions of hospitals to preventive medicine (Mr. C. E. A. Bedwell), the economic value of physical treatment (Dr. J. B. Mennell), and the report of THE LANCET Commission on Nursing (Sir Squire Sprigge). The congress will close on Nov. 19th, and the programme may be had from the hon. secretary at 13, Victoria-street, London, S.W.1.

## THE SERVICES

### ROYAL NAVAL VOLUNTEER RESERVE

Surg. Sub.-Lt. H. A. Lockhart to be Surg. Lt.

### ROYAL ARMY MEDICAL CORPS

Lt.-Col. R. H. L. Cordner retires on retd. pay.

Lt.-Col. J. S. Dunne, having attained the age for compulsory retirement, is placed on retd. pay.

Majs. S. G. Walker and C. E. L. Harding to be Lt.-Cols.

Maj. A. E. B. Wood relinquishes his appt. under Art. 520 (*b*), Royal Warrant for Pay and Promotion, 1931, and resumes the rank of Lt.-Col.

Maj. W. Walker retires, receiving a gratuity.

The following relinquish their temp. commns.: Maj. E. M. J. O'Farrell, and retains the rank of Maj.; Capt. W. Owen-Prichard, and is granted the rank of Lt.-Col.; Capts. A. C. Murray and J. Crean, who retain the rank of Capt.; and Capt. B. H. H. Tripp.

Lt. J. E. Snow to be Capt. (prov.).

#### ARMY DENTAL CORPS

Maj. A. A. McMullan retires, receiving a gratuity.

#### ARMY RESERVE OF OFFICERS

Col. A. C. B. Wraughton, late R.A.M.C., and Lt.-Cols. F. J. Garland and A. D. O'Carroll, having attained the age limit of liability to recall, cease to belong to the Res. of Off.

#### TERRITORIAL ARMY

Lt.-Cols. J. K. Lund and W. A. Robertson to be Bt.-Cols.

Maj. J. S. Hudson, on ceasing to be empld., retires and retains his rank, with permission to wear the prescribed uniform.

Maj. J. Kinnear to be Lt.-Col., and to comd. 152nd (Highland) Fd. Amb.

Maj. J. Blackwood, on ceasing to be empld., retires and retains his rank, with permission to wear the prescribed uniform.

Lt. E. S. Kirkhouse to be Capt.

*Supernumerary for service with O.T.C.*—Lt. B. G. Scholefield to be Capt.

#### TERRITORIAL ARMY RESERVE OF OFFICERS

Lt.-Col. and Bt.-Col. W. A. Robertson, from Active List, to be Lt.-Col. and Bt.-Col.

### INDIAN MEDICAL SERVICE

Lt.-Col. (Bt.-Col.) A. W. M. Harvey to be Col.

The probationary appt. of Capt. J. A. W. Ebden is confirmed.

### ROYAL AIR FORCE

Flight Lt. J. G. Russell is promoted to the rank of Squadron Leader.

Flying Officer R. N. Kinnison (Lt., T.A.R. of O.), is promoted to the rank of Flight Lt.

### HON. SURGEON TO THE KING

Maj.-Gen. E. A. Walker, I.M.S., V.H.S., has been appointed Hon. Surg. to the King, vice Maj.-Gen. H. Boulton, I.M.S., retd.

### COLONIAL MEDICAL SERVICE

Dr. N. J. Abbensetts (medical officer, Boundary Commission) has been appointed Government Medical Officer, British Guiana; and Dr. L. A. P. Slinger (late Medical Officer) becomes Asst. Surgeon to the Victoria Hospital, St. Lucia.

# PANEL AND CONTRACT PRACTICE

## Scope of Treatment under the Act

THE terms of service provide that the medical treatment which an insurance practitioner is required to give to an insured person shall include :—

"All proper and necessary medical services other than those involving the application of special skill and experience of a degree or kind which general practitioners as a class cannot reasonably be expected to possess."

The insured person is therefore not entitled to a medical service which involves the application of special skill and experience, and the doctor giving such a service is entitled to charge the insured person for such service, providing he can satisfy both the local medical committee and the insurance committee for the area that the service did involve the application of special skill and experience and that he was qualified to give it. It is noteworthy that both special skill and experience are required ; it would not be enough to have special skill alone, the practitioner must have experience. The dictionary defines skill as "familiar knowledge of any art united with dexterity in the practice of it," and dexterity as "a ready expertness due to practice in the employment of mechanical or mental resources " ; experience is "the ascertained result of a series of trials or experiments." The practitioner who claims to be making a service which is outside the Act must accordingly have familiar knowledge of the service, combined with a ready expertness due to practice in the employment of mechanical or mental resources for this service, and he must know the result of a series of similar trials of it.

### MANUAL AND MENTAL DEXTERITY

Anyone who glances through a list of services for which fees have been claimed (on form G.P.45), on the ground they are outside the Act, is likely to be impressed by the number of cases in which fees are allowed where the employment of mechanical rather than mental resources would appear to be the deciding factor in admitting the claim. The enucleation of tonsils, for example, does not require much mental dexterity, but an appreciable amount of manual dexterity. The same would probably hold true for an appendicectomy. Again, another deciding factor for the allowance of fees under G.P.45 might be the provision of expensive apparatus. It would clearly be impossible to demand that every insurance doctor should be possessed of a modern X ray or diathermy plant, or even of an artificial sunlight lamp ; a certain amount of manual dexterity is required in using all these pieces of apparatus, but the skill lies largely in the interpretation of results. Claims for fees for such medical services are, as a rule, allowed, because if it were held that the service was within the Act it would follow that any insured person would be able to demand X ray examination as a right from any insurance doctor. On the other hand, no claim for fees has ever been allowed for the service of making a diagnosis, although it may require a special knowledge of a high order combined with a ready expertness in the employment of mechanical and (notably) mental resources. The physician who decides the cause of some localised paralysis and deduces therefrom the appropriate treatment would not have his claims admitted if he filled in G.P.45 for such service. All insurance doctors, being qualified medical men, are however expected to be able to make a diagnosis, no matter how difficult this may be. Hence no special fees are allowed. The physician who diagnoses diabetes would not be allowed fees for the diagnosis nor for the treatment by diet or insulin ; but if he estimates the patient's blood-sugar his claim will be allowed because this estimation demands manual and mental dexterity beyond what a practitioner might reasonably be expected to possess. Moreover, in every case where claims under G.P.45 arise it is the practitioner's duty to give the patient the opportunity of getting the special service done for nothing at a hospital.

### THE CASE OF PSYCHOTHERAPY

Let us now consider how these arguments apply to psychotherapy, a subject which was discussed again at the last meeting of the London insurance committee. Is psychotherapy a special medical service ? First of all, is there any hospital to which a case thought to be needing psychotherapy can be sent, as an out-patient, for treatment ? There are certainly not many such hospitals in this country, so that the opportunity to get the service gratuitiously will in most cases not be available. Secondly, it is quite certain there is no manual dexterity in this service. There may be some degree of mental dexterity required, but is this of a higher order than that required to make a diagnosis in some forms of nervous disease and for which, as we have seen, no fees would be payable. Does not the treatment given in psychotherapy depend largely on the diagnosis ?—for which no doctor is paid by G.P.45. Having arrived at the diagnosis, is the consequent treatment beyond ordinary general practitioner skill ? Discussion of the question whether psychotherapy comes under G.P.45 will be resumed at the next meeting of the London insurance committee, and if this committee still decides to differ from the local medical committee, the Ministry will have to place the matter before a court of referees. This would mean expense, but the matter is also expensive to the insured person, who, by the very nature of his trouble, is much under the doctor's influence, and however unable to afford private fees would hardly dare to refuse to pay because of the hope of improvement held out to him by this form of treatment. While the position is one fraught with danger of abuse, it is quite possible for those who are experts in this specialty to give their insured patients such treatment without special fees. It would, of course, be far better if the two committees could agree about the position.

## Removal from your List

A rather interesting point arose recently in a medical service case. The regulations provide that an insured person can be removed from an insurance practitioner's list in three ways : by action of the insured person ; by action of the insurance committee ; or by the insurance practitioner. It was on this last method of procedure that discussion arose. The terms of service provide that a doctor can give notice to his insurance committee at any time to have a person's name removed from his list, but this is subject to certain restrictions as will be seen in the following clause :

If a practitioner has given notice to the committee of his desire to have an insured person removed from his list and the insured person is, at the date when the removal would take effect, incapable of work, and is receiving treatment from the practitioner, the practitioner shall notify the committee of the insured person's incapacity, and the

removal shall not take effect, unless the insured person in the meantime applies to and is accepted by another practitioner, until fourteen days after the date on which the practitioner notifies the committee that the insured person is fit to resume work; but this paragraph shall not apply in any case in which, owing to the chronic nature of the insured person's illness, medical certificates are, under the terms of the medical certification rules, being given at less frequent intervals than one week.

This clause is put in to protect insured persons being unloaded on the service during an acute illness. It will be seen that (subject to no acceptance by another doctor) the delay in removal is conditional on the patient being (1) in receipt of treatment, (2) incapable of work; but a chronic case, as defined in the clause, is an exception to the rule. The certificate in question is the pink form 40 B, containing the phrase "Your incapacity is of such a character that it will be unnecessary to see you for the purpose of treatment more frequently than once in . . . weeks." (The blank period may not be more than four.) This procedure would appear to be fair to all parties in the case of chronic invalids who are receiving such certificates, but there are a number of old and infirm insured persons who by reason of being over 65 do not receive any certificates at all, and from the above it would appear to be impossible for the insurance doctor who may be attending such a really chronic case ever to be able to get that case removed from his list under the clause mentioned above, as if he gets no certificates he cannot be said to be receiving certificates "at less frequent intervals than one week."

### Lost Cheques

It occasionally happens that an insurance practitioner does not receive the cheque issued to him quarterly by the insurance committee. It may be lost in the post, lost in the doctor's house, lost in the committee's office. When he applies for the issue of another cheque the usual procedure is for the committee to require him to sign a form which guarantees the committee against loss through the issue of a second cheque. The signing of an indemnity form might be fair if the practitioner admits he has had the cheque and lost it, but not when it is denied that he has never received it. This matter was discussed at the last meeting of the London panel committee when it was decided to ask the Insurance Acts committee to take the matter up with the Ministry.

### A Correction

Last week it was stated that the conference of the National Association of Insurance Committees passed a resolution to suggest the alteration of Clause 7 III. from a period of one month to that of three months. This was the original proposition, but an amendment by London was carried, under which the alteration suggested was six weeks and not three months.

## PUBLIC HEALTH SERVICES

### Typhoid in Yorkshire

LAST week we gave some account of two epidemics of typhoid in Yorkshire—one in the West Riding, near Huddersfield, the other in the North Riding, at and around Malton—and were enabled by the courtesy of the medical officer of health to set out in the former case how the infection arose. Dr. L. C. Walker, medical officer of health (urban and rural) for Malton, has sent us similar details for his own area. "The various medical practitioners in the town," he writes, "realised towards the end of the week ending Oct. 22nd that there were several probable cases of typhoid, but it was not until the 22nd that the first case of typhoid was notified. Another case was notified on the 23rd and 15 cases on the 24th. On Sunday, the 23rd, when it was evident that there was a possibility of a sudden epidemic arising, I began to take the necessary precautions. I arranged for the bellman to go round the town on the Monday morning, warning people that both water and milk should be boiled, and notices to the same effect were distributed to every house in the town twice on that day. I had already taken a sample of water from our town supply on the 23rd for bacteriological examination, and on the Monday my sanitary inspector went into the question whether any connexion could be made out between the milk-supply of the town and the epidemic. As there were so many different milk retailers and no general wholesalers this was at once, and easily, ruled out. The explosive character of the epidemic, however, made us suspect that the cause could be nothing but the water-supply.

"The water-supply of Malton is actually taken from a well on the lower oolite practically at river level, and from this well pumped up to a reservoir on the higher part of the town. Malton is situated on the southern spurs of the Castle Howard Hills, on limestone. This overlies a bed of clay, and the springs come out between the two. Quite near the river and owing to the clay the tendency is for this water to drain down towards our well rather than into the river. During pumping hours the supply goes direct to the houses, and when pumping is not being carried on the supply is carried from the reservoir. As there was no definite source of pollution in the neighbourhood of the well we had to look for a possible source elsewhere. There had been no flooding for some time, so there was no question of pollution from this source. The nearest known possible source of pollution was a case of typhoid at the poor-law institution, a distance of about 200 yards from the well and somewhat above it. This case of typhoid had entered the institution on Sept. 21st, and from about the 24th or 25th had been treated as a typhoid under the head charge nurse.

"We therefore attempted to find some connexion between this case and our well, and thought at first that there might be a possibility of a direct leak into our main, if cracked, from the drains of the workhouse. At one place they were quite near together, but on excavating we found that there was no sign of leakage. We then tested by water the next part of the drain, and found it impossible to fill this length of the drain, which measured only some 20 yards from one inspection chamber to the next; although we had five taps pouring water into the drain for about an hour and a half it was impossible to fill this section; in fact, after removing the plugs it was still almost empty. We continued excavation of the drain and eventually found that at one place, where work had been done about 18 months ago on some electric cables, two holes had been made in the drain by a workman's pick, and the water teemed out of these holes as fast as we put it in. This was the last occasion on which the ground had been opened in the region of this drain. Below the holes were appreciable cavities where the soil had been washed away, and the water from our taps disappeared through these cavities as fast as we put it into the drain. This

seemed to establish a definite connexion between the cases of typhoid and the well.

"When it was realised on the morning of the 24th that we should probably have a large number of cases, I decided, if possible, to take over the Malton Hospital, a new and up-to-date building, eminently satisfactory for the purposes of an isolation hospital. By sending several cases home and removing those still requiring surgical attention to York County Hospital, it was possible to empty it so that we could take it over as an isolation hospital. By the evening of the 24th we had cleared the hospital and already taken in 8 cases. With 15 cases on the 24th, 10 on the 25th, and the balance made up on the 26th, we had soon filled our total of 38 beds.

"As cases were still crowding in I had to look round for further help, and already having arrangements with York for treating our fever cases, I was enabled to get several beds there. The East Riding county council, through Dr. R. L. Thornley, and later Scarborough isolation hospital, through Dr. S. F. Linton, very kindly came to our rescue and have also taken cases in. At the present moment we are also filling up Leeds. So far we have 168 cases in these various hospitals, and 6 deaths have occurred. There are, in addition, as far as I have been able to find out, about 15 contact cases—people working in Malton or children coming to school in Malton—in various parts of the surrounding country."

## INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED OCT. 29TH, 1932

*Notifications.*—The following cases of infectious disease were notified during the week :—Small-pox, 34 (last week 33); scarlet fever, 2281; diphtheria, 986; enteric fever, 138 (last week 83); acute pneumonia (primary or influenzal), 838; puerperal fever, 31; puerperal pyrexia, 109; cerebro-spinal fever, 22; acute poliomyelitis, 43; acute polio-encephalitis, 5; encephalitis lethargica, 12; continued fever, 1 (Earsdon U.D., Northumberland); dysentery, 4; ophthalmia neonatorum, 87. No case of cholera, plague, or typhus fever was notified during the week.

Of the cases of small-pox, 27 (i.e., all except 7) were returned from the county of London, distributed thus among the metropolitan boroughs: Bethnal Green and Stepney each 1, Hackney 3, Lambeth 6, Islington 7, Poplar 9.

Of the cases of enteric fever, 80 were reported from the North Riding of Yorkshire (Malton 78, Scarborough 1, Helmsley R.D. 1), and 19 from the West Riding, 8 of which occurred in the urban district of Denby and Cumberworth.

The number of cases in the Infectious Hospitals of the London County Council on Nov. 1st–2nd was as follows:—Small-pox, 64 under treatment, 4 under observation (last week 65 and 4 respectively); scarlet fever, 2066; diphtheria, 1745; enteric fever, 20; measles, 222; whooping-cough, 348; puerperal fever, 21 (plus 8 babies); encephalitis lethargica, 231; poliomyelitis, 6; "other diseases," 162. At St. Margaret's Hospital there were 18 babies (plus 8 Mothers) with ophthalmia neonatorum.

*Deaths.*—In 117 great towns, including London, there was no death from small-pox or enteric fever, 7 (1) from measles, 10 (1) from scarlet fever, 14 (1) from whooping-cough, 30 (5) from diphtheria, 61 (19) from diarrhœa and enteritis under two years, and 42 (6) from influenza. The figures in parentheses are those for London itself.

Three deaths from diphtheria occurred at Manchester and at Stockport. Birmingham reported 5 fatal cases of influenza, Manchester 3.

The number of stillbirths notified during the week was 266 (corresponding to a rate of 43 per 1000 total births), including 42 in London.

# PARLIAMENTARY INTELLIGENCE

## NOTES ON CURRENT TOPICS

### Mental Treatment Act, 1930

IN the House of Commons on Nov. 2nd Sir E. HILTON YOUNG, Minister of Health, moved that the following rules, dated July 28th, 1932, made by the Board of Control with the approval of the Lord Chancellor under Subsection (1) of Section 338 of the Lunacy Act, 1890, as extended by Subsection (2) of Section 21 of the Mental Treatment Act, 1930, which were presented on Oct. 18th, be approved, namely: The Mental Treatment (Lancashire Mental Hospital Board) Rules, 1932. S.R.O., 1932, No. 666; the Mental Treatment (Staffordshire Mental Hospitals Board) Rules, 1932. S.R.O., 1932, No. 667; The Mental Treatment (West Riding of Yorkshire Mental Hospital Board) Rules 1932. S.R.O., 1932, No. 668.

The motion was agreed to.

### Edinburgh Maternity Hospital

The Edinburgh Royal Maternity and Simpson Memorial Hospital Order Confirmation Bill (which has already passed through the House of Lords) was read the third time in the House of Commons on Nov.7th.

## HOUSE OF COMMONS

WEDNESDAY, NOV. 2ND

### The Spahlinger Vaccine

Mr. GROVES asked the Minister of Agriculture whether he had received any reports regarding the testing of the Spahlinger vaccine on cattle in this country; and whether any conclusions had been reached regarding that vaccine as a preventive of tuberculosis.—Major ELLIOT replied: I have seen the report of the trial of Mr. Spahlinger's vaccine which was carried out in 1929–30. After his public announcement at the beginning of this year as to the method of preparation of his vaccine, Mr. Spahlinger was invited and agreed to supply vaccine for independent test in this country. Arrangements are now in progress for the test concerning which the Ministry is in communication with Mr. Spahlinger; and it will be undertaken as soon as the vaccine arrives.

THURSDAY, NOV. 3RD

### Cancer among Nickel Workers

Mr. DAVID GRENFELL asked the Home Secretary if he would give the House the results of his investigations into the incidence of cancer among men who had been employed at the Mond nickel works; and whether he was now in a position to recommend precautionary measures for the protection of the men engaged in the processes where previous cases had occurred.—Sir JOHN GILMOUR replied: I am advised that the investigations made earlier in the year, which included a special inquiry by a pathologist, did not establish that the cases of cancer among these men were of industrial origin; and no substance known to give rise to cancer appeared to be in use at the works. It was proposed that the next step should be an expert examination of a number of the employees, but it was found necessary to postpone this owing to the closing of the works four months ago. I understand that work may be restarted shortly and that it is intended to commence these examinations as soon as practicable, and if the results should indicate that any particular precautions would be of value, the question of putting them into operation would be immediately followed up.

Mr. GRENFELL: Would the Home Secretary not consider the advisability of setting up a Departmental Committee of a similar kind to that which reported last year upon mule-spinners' cancer in view of the evidence already in possession of the local people?

Sir J. GILMOUR: I think that by far the best way is that the examination which has been promised should be undertaken by experts who are more likely to get practical results than any committee.

Mr. GRENFELL: Is the Home Secretary not prepared to give some consideration to the local demand and to do

something to allay the suspicion that information is being deliberately withheld?

Sir ARTHUR MICHAEL SAMUEL: Is not information obtainable from nickel works in other countries through the International Labour Office?

Sir J. GILMOUR: I do not think that there is anything by which we can directly associate this disease with the processes concerned so far as our present knowledge goes. The examinations which are going to be undertaken may help us to come to some conclusion.

Mr. GRENFELL: Is it not known that cancer is more or less connected with mineral oils such as are used in this process, and is it not important that that should be considered?

Sir J. GILMOUR: All I can say is that those concerned, both in the firm and in my office, are taking every opportunity to study this problem, and the medical officer connected with the firm has gone through a special course quite recently to bring himself up to date with the latest information on this subject.

### Relief of Unemployed Persons

Mr. KIRKWOOD asked the Minister of Health whether in view of the poverty that had existed all the summer and the suffering which the approach of winter would cause to the unemployed who had been unable to buy new clothes, bedding, and furniture for years, he would state what arrangements the Government were making to prevent further suffering.—Sir E. HILTON YOUNG replied: The responsibility for providing food, clothing, and shelter for those who are in need, whether on account of unemployment or not, rests with the public assistance authorities. As regards England and Wales, I am watching the situation closely and I am satisfied that the resources of the authorities will be equal to any additional strain which may be placed upon them.

### British Meat for Mental Institutions

Sir PERCY HURD asked the Minister of Health whether he was aware that the Cheshire county council had arranged that the meat for the mental institutions under their control should be British and be bought wholesale at the markets and slaughtered by their own officials, the average cost over the 12 months being 4¼*d.* per lb.; and whether he would make this fact known to other local authorities for the encouragement of British agriculture.—Sir E. HILTON YOUNG replied: I am informed that a considerable part of the meat purchased for these institutions is British, and that the average cost for the last 12 months is about 5½*d.* per lb. I will communicate with my hon. friend with regard to the details and also as to the suggestion contained in the second part of the question.

### Slum Clearance and Re-housing

Mr. DENMAN asked the Minister of Health to what extent local authorities in general were carrying out the five-year plans of slum clearance and re-housing submitted to him under the Housing Act, 1930; how many areas were at present in process of being cleared; and how many dwellings were being built for re-housing the persons displaced.

Sir E. HILTON YOUNG replied: I have received resolutions declaring 541 areas in England and Wales, the clearance of which involves the displacement and re-housing of approximately 78,150 persons, to be clearance areas under the Housing Act, 1930. Information as to the number of areas at present in process of being cleared is not available; but 229 clearance or compulsory purchase orders have been confirmed in connexion with such areas. Upwards of 16,000 houses, which are either earmarked or available or the purposes of the Act, have either been erected or are under construction.

Mr. DENMAN: Does the right hon. gentleman think the time has come for speeding up the process of slum clearance and re-housing?

Sir E. HILTON YOUNG: I can assure the hon. Member that there will be no relaxation of effort. At the same time I would point out that, allowing for the necessary difficulties of starting this work, the progress cannot be looked upon as unsatisfactory.

Sir P. HARRIS: Can we be assured that the Ministry of Health are not holding up any of these schemes on the ground of economy?

No further answer was given.

### Accidents to Children in London Streets

Mr. RHYS DAVIES asked the Home Secretary the number of street accidents in London during the last 12 months in which children under 5 years of age were involved; and whether it would be possible to obtain similar information with respect to street accidents over the whole country.—Sir J. GILMOUR replied: There were 51 fatalities in street accidents among children under 5 in the metropolitan police district and City of London during the year ended Sept. 30th last. I regret that figures for non-fatal accidents to children under 5, and for fatal or non-fatal accidents to such children for the country as a whole, could not be obtained without incurring considerable expense.

### Payment of Income-tax

Mr. HALL-CAINE asked the Chancellor of the Exchequer whether, in view of the improved financial situation, he would consider the advisability of abolishing the existing provision under which 75 per cent. of income-tax payable in respect of the current financial year should be paid on Jan. 1st next and providing for the payment of one-half such amount in lieu thereof, with a view to alleviating as far as possible the burden upon industry and the tendency to create further unemployment that would result from the obligation to pay so large a proportion of the tax at this date.—Mr. CHAMBERLAIN replied: I regret that I could not possibly entertain any suggestion for an alteration of the law governing the collection of the income-tax for the current year. I am afraid that my hon. friend is under a grave misapprehension if he thinks that the present state of the national finances would permit of any relaxation in the collection of the income-tax.

### Repairs to a Doctor's Telephone

Mr. PERKINS asked the Postmaster-General whether he was aware that a prominent London doctor working at Westminster Hospital had his telephone (Egham 314) cut off for Oct. 22nd, 23rd, and 24th, and why no attempt was made to repair this telephone until Oct. 25th.—Sir KINGSLEY WOOD replied: I regret to find that by an oversight, of which proper notice will be taken, the circuit Egham 314 was not included in the list of lines scheduled for emergency attention to faults. A considerable number of faults developed in the Egham area during the week-end Oct. 22nd to 24th, owing to abnormal weather conditions, and there was unfortunately some delay in restoring service on circuit Egham 314. The work of repair was, in fact, begun on the 24th. The circuit has now been included in the emergency list.

TUESDAY, NOV. 8TH

### Condemned Houses in Edinburgh

Mr. GUY asked the Secretary for Scotland the number of houses in Edinburgh which had been condemned as unfit for habitation and which were still occupied.—Mr. SKELTON replied: The total number of houses in Edinburgh which have been condemned as unfit for human habitation and which are still occupied is 1009.

### Safety of Life at Sea

Sir BASIL PETO asked the President of the Board of Trade whether all the five principal maritime powers had ratified the Safety of Life at Sea Convention; and whether, if they had not done so before the end of December, he intended to put the reversal of helm orders in force in the British merchant service on Jan. 1st.—Mr. RUNCIMAN replied: The following countries have ratified and will bring the International Safety of Life at Sea Convention into operation on Jan. 1st, 1933:—United Kingdom, Canada, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Spain, and Sweden. Steps are being taken to bring the provisions of the Merchant Shipping (Safety and Load Line Convention) Act, 1932, including those relating to Helm Orders, into operation on that date.

## Births, Marriages, and Deaths

### MARRIAGES

SCOTT TAGGART—BAYSTON.—On Nov. 9th, 1932, at the Parish Church, Cheltenham, Norman, elder son of Dr. and Mrs. J. Scott Taggart, of Peel Moat, Heaton Moor, to Gwendoline, only daughter of Mr. and Mrs. Arthur Bayston, of Cranley Lodge, Cheltenham.

SHAWCROSS—CARTWRIGHT.—On Nov. 2nd, at St. Paul's, Herne Hill, Ellis W. H. Shawcross, M.A., M.R.C.S., of Beckenham, to Gladys L. (Jill), daughter of Mr. and Mrs. Alfred Cartwright, of Herne-hill.

### DEATHS

BROWNLOW.—On Nov. 5th, Harry Lurgan Brownlow, F.R.C.S., aged 64.

CROSS.—On Nov. 7th, after a long illness, at Shackleford House, Petersfield, Dr. Robert George Cross, in his 70th year.

HILL.—On Nov. 5th, A. Bostock Hill, M.D., D.P.H., aged 78.

LEDIARD.—On Oct. 31st., at Carlisle, Henry Ambrose Lediard, M.D. Edin., F.R.C.S Eng., J.P., aged 84 years.

POWELL.—On Nov. 1st, suddenly, at Bilton, Herbert Edward Powell, M.R.C.S., L.R.C.P.

WRIGHT.—On Nov. 2nd, at his residence, Hillside, Abinger Common, and late of Eye, Suffolk, Lieut.-Colonel C. F. Wright, J.P., T.D., M.R.C.P., L.S.A., aged 71 years.

*N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# OBITUARY

## ALFRED BOSTOCK HILL, M.D., D.P.H.

EMERITUS PROFESSOR OF HYGIENE IN THE UNIVERSITY OF BIRMINGHAM

WE regret to announce the death of Prof. Bostock Hill, a leading authority on public health, which occurred at Weybridge on Saturday last, Nov. 5th.

Alfred Bostock Hill was born in 1854. His father Dr. Alfred Hill, the first medical officer of health for the City of Birmingham, was appointed in 1872 after the passing of the Public Health Act of that year, and when he died in 1922 at the advanced age of 95, his two sons, the subject of this memoir and the late Sir Eustace Hill, were both county medical officers of health. Bostock Hill received his general education at King Edward's School, Birmingham, and continued his medical education partly in that city at Queen's College—then the Birmingham medical school with a Royal charter—and partly in Edinburgh, where he qualified in 1876 as L.R.C.P. Edin. and L.M., taking also the L.S.A. diploma. He later obtained a medical degree at Giessen, and made an early start in his career as a sanitarian with the appointment of public analyst to the county of Warwick. In 1879 he became professor of chemistry in Queen's College, took the D.P.H. Camb. in 1881, and shortly afterwards was appointed to the post of professor of hygiene in Mason's College, Birmingham, of which institution Queen's College had now become the medical faculty. On the erection of Mason's College into the University of Birmingham in 1900, Bostock Hill became professor of hygiene and public health in the university, receiving the degree of M.Sc. Birm.

PROF. BOSTOCK HILL

[*Photograph by Elliott and Fry*

The whole of Bostock Hill's life was spent in administering, under different authorities, the regulations for the maintenance of public health. His various appointments make up a lengthy list and he discharged the responsibilities well as is sufficiently shown by his recurrent selection for official posts. At the Royal Sanitary Institute he was a vice-president and acted as an examiner of students; he was president of the Section of State Medicine in 1911 at the annual meeting of the B.M.A. and in the same year was chosen president of the Society of Medical Officers of Health. He was a member of the executive of the British Social Hygiene Council and of the Board of Studies of Hygiene in the University of London, and from 1917 until 1924 was president of the County Medical Officers Association. His long personal experiences led to much desultory but useful publications on many subjects of public health interest. He wrote on water filtration, the purification of sewage, and the spread of scarlatina by milk in different reports, while in his public lectures and addresses he made some useful summaries of the history of sanitary development in this country, and dealt with basic subjects such as the scope of the M.O.H., the evolution of the county health department, and the relation of voluntary effort to State authority in the carrying out of social and sanitary reform.

Dr. R. A. Lyster, a friend of 35 years' standing, an old pupil and assistant, sends us the following appreciation: "One of Bostock Hill's proudest boasts was about the number of his former students and assistants who are scattered over the country—indeed the world—occupying all grades of public health posts, and putting into practice the principles of prevention that they had learned from him. No man has had a stronger influence upon administrative public health in this country. Appointed professor of public health at an early age—he was for a long time the youngest member of the senior staff at Mason's and Queen's College, Birmingham—he was able to teach the essential principles of public health and preventive medicine to generation after generation of medical students. Bostock Hill's lectures will always be remembered by his students. He possessed gifts as a teacher such as are rarely found in medical schools, at any rate in this country. He was, moreover, obviously in love with his subject, and he enjoyed every minute he spent in teaching it.

"In his administrative activities he covered the widest possible field. While his life's work was undoubtedly the creation in Warwickshire of one of the finest of county health departments, he also held local positions as M.O.H. for many years, for the borough of Sutton Coldfield, the urban district of Erdington and the rural district of Castle Bromwich. And no member of the public health service has ever established a greater reputation for soundness of work. Perhaps this was due partly to his scientific training in addition to medicine. As an expert analytical chemist he combined the post of county analyst with that of county medical officer with marked advantage to both.

"Those who knew him best recognised that in addition to Bostock Hill the cultured medical and scientific man, and the sound and experienced administrator, there was also a shrewd and sagacious business mind, and an equable temperament which enabled him to view life from a philosophic standpoint. An attractive and lovable personality, he endeared himself to all his more intimate friends and old students to a degree established by very few teachers and chiefs of departments. None ever hesitated to turn to him for advice and help, and none was ever disappointed. All ranks of the public health service have lost in him a friend, while many mourn personally a teacher and a chief whose passing has made acute their sense of indebtedness to him."

Dr. Bostock Hill married Elizabeth, daughter of Mr. W. H. Barber, of Edgbaston, Birmingham.

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## HENRY AMBROSE LEDIARD, M.D. Edin., F.R.C.S. Eng., J.P.

Dr. Lediard, who died at Carlisle on Oct. 31st, a few days before his 85th birthday, was the son of Samuel Lediard, solicitor, and Mary Croft Whatley, both of Cirencester, and claimed among his forbears Thomas Lediard, F.R.S. (1685–1743), the historian and biographer of Marlborough. He was educated

at Cheltenham College and Edinburgh University, qualifying in 1870, when he was chosen house surgeon to James Spence at the old Royal Infirmary. He became an ardent admirer of Syme, learned the new antiseptic technique by watching Lister dressing his cases on Sunday afternoons, and saw Simpson administer chloroform drop by drop on a towel. After leaving Edinburgh, Lediard went to Manchester as house surgeon at the infirmary and then to the Central London Sick Asylum, attending clinical practice at several general hospitals. He took the M.D. Edin. in 1875, and the F.R.C.S. Eng. in 1876.

Through the good offices of Matthews Duncan he then joined Mr. W. B. Page and Dr. J. A. Macdougall in partnership at Carlisle. In 1880 Lediard was appointed assistant surgeon to the Cumberland Infirmary, which he served for 50 years until his resignation in 1930, when he was appointed consulting surgeon and vice-president. During these years his papers on medical, surgical, and ophthalmological subjects were to be counted by scores. Among the more notable of them was an account of a successful case of excision of popliteal aneurysm, in which he observed that excision of part of the popliteal vein did not prevent the good result. He also recorded a successful case of excision of a subclavian aneurysm by Allingham's method. Lediard had a large experience of goitre and of urinary calculus in a district where these diseases were common. As a general surgeon he was held in high esteem by all classes in Cumberland and the border counties. He may truly be said to have introduced the benefits of modern operative surgery to this district, and till late in life he kept in touch with surgical development. It was through him that an X ray apparatus was installed at the infirmary in 1897. During the war he was made a justice of the peace for Carlisle.

Lediard was a widely read man, actively interested in the promotion of the Carlisle Literary Society and the establishment of Tullie House as a centre of the intellectual activities of the city. A man of strong character and independent mind, readily moved by the thought of injustice, he risked on more than one occasion the good opinion of his friends and colleagues in order to fight for what he considered just. In this way, early in his career, he was successful in obtaining the reprieve and ultimate pardon of a man condemned to death for the murder of a country woman near Carlisle. His private kindnesses and benevolences were many, and his high ideal of personal and professional conduct infected those who worked with him. He was a great lover of animals, especially of horses, and to the last drove through the streets of Carlisle in a victoria drawn by thoroughbreds.

Dr. Lediard leaves a widow and a daughter; his elder daughter died while serving as a V.A.D.

# Medical Diary

***Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.***

## SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

TUESDAY, Nov. 15th.—5.30 P.M., GENERAL MEETING OF FELLOWS. 8 P.M., PATHOLOGY. Laboratory Meeting at St. Mary's Hospital, London, W. Demonstrations: Sir Almroth Wright: 1. Spontaneous Phagocytosis. 2. Method of Encapsulating Blood. 3. Technique of Measuring Bactericidal Power of Whole Blood. Dr. E. A. Butterworth: 4. Para-influenza Bacilli in the Mouth. Dr. A. H. Thompson: 5. Method of Obtaining Enterococcus in Pure Culture from Fæces, &c. Dr. V. D. Allison: 6. A Simple Method of Obtaining Pure Primary Cultures of Ringworm. Dr. I. H. Maclean: 7. Results of Implantation of Human Carious Teeth in a Dog's Mouth. Dr. A. Fleming: 8. Some Convenient Class Methods. 9. Capsules of *B. influenzæ*. Dr. W. D. Newcomb: 10. Pathological Specimens.

THURSDAY.—5 P.M., DERMATOLOGY. (Cases at 4 P.M.) Cases will be shown.

FRIDAY.—5.30 P.M., PHYSICAL MEDICINE. Paper: Dr. C. W. Buckley: The Differential Diagnosis of Spondylitis and its Treatment by Physical Methods. A discussion will follow. RADIOLOGY. Members of this Section are specially invited to attend the Meeting. 8.15 P.M., OBSTETRICS AND GYNÆCOLOGY. Prof. Herbert Spencer: Two Cases of Cancer of the Body of the Uterus, with Metastases in the Vagina and Vulva, treated by Hysterectomy and Radiation and free from Recurrence after Ten and Thirteen Years. Paper: Mr. Eardley Holland: On the Termination of Early Pregnancy by Abdominal Hysterotomy. Mr. J. P. Hedley: An X Ray of an Occipito-posterior Position. 8.30 P.M., RADIOLOGY. Short reports of cases will be given.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Nov. 14th.—8 P.M., Clinical Evening.

HUNTERIAN SOCIETY.

MONDAY, Nov. 21st.—9 P.M. (at the Apothecaries Hall, Water-lane, E.C.), Discussion on the Influence of Faith on Disease, when the Rev. Father Woodlock, Dr. Robert Hutchison, and Dr. William Brown have promised to speak.

SOCIETY OF MEDICAL OFFICERS OF HEALTH, 1, Upper Montague-street, W.C.

FRIDAY, Nov. 18th.—5 P.M., Dr. A. S. M. Macgregor: Epidemiological Features of the Pneumococcus and its Types.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

THURSDAY, Nov. 17th.—8.15 P.M. (at the Hospital for Tropical Diseases, Endsleigh-gardens, Gordon-street, W.C.), Clinical Meeting.

BIOCHEMICAL SOCIETY.

FRIDAY, Nov. 18th.—4.30 P.M. (at the London School of Hygiene and Tropical Medicine, Keppel-street, W.C.), Communications.

CHELSEA CLINICAL SOCIETY.

TUESDAY, Nov. 15th.—7.30 P.M. (at the Hotel Rembrandt, Thurloe-place, S.W.), Dinner followed by discussion on Non-specific Protein Therapy, to be opened by Dr. E. W. Bray.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's-inn Fields, W.C.

TUESDAY, Nov. 15th.—5 P.M., Mr. Francis Weston: The London Guild of Barbers (formerly Barbers Chirurgeons) and Thomas Vicary, Serjeant Surgeon to Henry VIII, as Master thereof. (Vicary Lecture.)

UNIVERSITY COLLEGE, Gower-street, W.C.

THURSDAY, Nov. 17th.—5.30 P.M., Sir Charles Sherrington: Reflex Action.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, London, W.

MONDAY, Nov. 14th, to SATURDAY, Nov. 19th.—MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W. Tues., 4 P.M., lecture by Mr. J. Alban Andrews: Renal Tuberculosis. (Free to Members.)—WEST END HOSPITAL FOR NERVOUS DISEASES, 73, Welbeck-street, W. A course in Neurology, daily at 5 P.M.—ROYAL WATERLOO HOSPITAL, Waterloo-road, S.E. A course in Medicine, Surgery, and Gynæcology. Afternoons and some mornings.—HOSPITAL FOR CONSUMPTION, Brompton, S.W. A Course in Practical Pathology dealing with Laboratory Methods and the Interpretation of Results. Thurs., 11.45 P.M.—LAMBETH HOSPITAL, Brook-street, S.E. Demonstration of Selected Cases of General Interest by Dr. G. F. Stebbing, assisted by the staff of the hospital. Fri., 2 P.M.—LONDON LOCK HOSPITAL, 91, Dean-street, W. Course in Venereal Diseases. Afternoons and evenings.—CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS, Victoria Park, E. All day course in Diseases of the Chest.

WEST LONDON HOSPITAL POST-GRADUATE COLLEGE, Hammersmith, W.

MONDAY, Nov. 14th.—10 A.M., Genito-urinary Operations, Skin Department. 11 A.M., Surgical Wards. 2 P.M., Eye and Gynæcological Out-patients. 4.15 P.M., Lecture, Mr. Simmonds: Surgery of the Thyroid.

TUESDAY.—10 A.M., Medical Wards. 11.15 A.M., Surgical Demonstration. 2 P.M., Throat, Nose, and Ear Out-patients.

WEDNESDAY.—10 A.M., Medical Wards, Children's Medical Out-patients. 2 P.M., Eye Department. 4.45 P.M., Venereal Diseases Demonstration.

THURSDAY.—10 A.M., Neurological Out-patients. 11.30 A.M., Demonstration of Fractures. 2 P.M., Eye and Genito-urinary Out-patients.

FRIDAY.—10 A.M., Skin Out-patients. 2 P.M., Throat, Nose, and Ear Out-patients. 4.15 P.M., Lecture, Mr. Roche: Demonstration of Urological Specimens.

DAILY.—At 2 P.M., Operations, Medical and Surgical Out-patients. The lectures at 4.15 P.M. are open to all Medical Practitioners without fee.

LONDON JEWISH HOSPITAL, Stepney Green, E.
THURSDAY, Nov. 17th.—4 P.M., Dr. Julius Burnford: A Survey of Treatment.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL POST-GRADUATE SCHOOL.
WEDNESDAY, Nov. 16th.—4 P.M., Dr. Monckton Copeman: Vaccination.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn-road, W.C.
FRIDAY, Nov. 18th.—4 P.M., Mr. A. Ryland: Demonstration of Museum Specimens.

NATIONAL HOSPITAL, Queen-square, W.C.
MONDAY, Nov. 14th.—2 P.M., Dr. Riddoch: Out-patient Clinic. 3.30 P.M., Dr. Kinnier Wilson: The Motor System.
TUESDAY.—2 P.M., Dr. Walshe: Out-patient Clinic. 3.30 P.M., Dr. Martin: Intracranial Pressure, Epilepsy, &c.
WEDNESDAY.—2 P.M., Dr. Martin: Out-patient Clinic. 3.30 P.M., Dr. Collier: Clinical Demonstration.
THURSDAY.—2 P.M., Dr. Kinnier Wilson: Out-patient Clinic. 3.30 P.M., Dr. Kinnier Wilson: The Motor System.
FRIDAY.—2 P.M., Dr. Adie: Out-patient Clinic. 3.30 P.M., Dr. Collier: Confusion, Aphasia, Dementia.

ST. PETER'S HOSPITAL FOR STONE, POST-GRADUATE COURSE, Henrietta-street, Covent Garden, W.C.
WEDNESDAY, Nov. 16th.—3 P.M., Mr. Ogier Ward: Elucidation of Urinary Symptoms; Pain.

ST. PAUL'S HOSPITAL, Endell-street, W.C.
WEDNESDAY, Nov. 16th.—4.30 P.M., Dr. H. N. Webber: Anæsthetics for Genito-urinary Cases.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL, Denmark-hill, S.E.
THURSDAY, Nov. 17th.—9 P.M., Mr. A. C. Palmer: Tubal Inflammation.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Nov. 15th.—5 P.M., Dr. H. W. Barber: Bacteriology and Mycology.
THURSDAY.—5 P.M., Dr. I. Muende: Pathology Demonstration.

NATIONAL COUNCIL FOR MENTAL HYGIENE.
WEDNESDAY, Nov. 16th.—5.30 P.M. (at 11, Chandos-street, Cavendish-square, W.), Dr. Isabel G. H. Wilson: Day Dreams.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James's Hospital, Ouseley-road, Balham, S.W.
WEDNESDAY, Nov. 16th.—4 P.M., Mr. V. Z. Cope: Demonstration of Surgical Cases.

ROYAL INSTITUTION, 21, Albemarle-street, W.
FRIDAY, Nov. 18th.—9 P.M., Dr. R. G. Canti: Cultivation of Living Tissue Cells.

ROYAL INSTITUTE OF PUBLIC HEALTH, Queen-square, W.C.
WEDNESDAY, Nov. 16th.—4 P.M., Dr. W. H. M. Telling: The Rôle of the Hospital Almoner in the Maintenance of Health and the Avoidance of Disease.
THURSDAY.—4 P.M., Dr. C. P. Blacker: Mental Defectiveness and Segregation and Sterilisation as Protective Measures.

PUBLIC HEALTH CONGRESS AND EXHIBITION, Royal Agricultural Hall, Islington, N.
MONDAY, Nov. 14th.—11.55 A.M., Opening of Congress by the Minister of Heal h.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST, Hardman-street, Deansgate.
WEDNESDAY, Nov. 16th.—4.30 P.M., Dr. Simon Kelly: Hilus Tuberculosis.

MANCHESTER ROYAL INFIRMARY.
TUESDAY, Nov. 15th.—4.15 P.M., Sir William Bragg: The Crystal Structures of Living Matter. (Lloyd Roberts lecture.)
FRIDAY.—4.15 P.M., Dr. J. Wharton: Demonstration of Ophthalmological Cases.

ANCOATS HOSPITAL, Manchester.
THURSDAY, Nov. 17th.—4.15 P.M., Dr. A. Renshaw: Undulant and Related Fevers.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION.
TUESDAY, Nov. 15th.—3.30 P.M., (in the Faculty Hall, Vincent-street), Prof. A. Hunter: Hormones.
WEDNESDAY.—4.15 P.M. (in the Western Infirmary), Mr. R. F. Young: Surgical Cases.

## Appointments

ROBINSON, A. LEYLAND, M.D. Lond., F.R.C.S. Eng., has been appointed Professor of Midwifery and Gynæcology, University of Liverpool.

SINCLAIR, H. M., M.B., Ch.B. Aberd., Certifying Surgeon under the Factory and Workshop Acts for the Maesteg district of Glamorgan.

## Vacancies

*For further information refer to the advertisement columns*

*Bolton Royal Infirmary.*—Two H.S.'s. Each £125.
*Bootle General Hospital, Derby-road.*—Anæsthetist. One guinea a session.
*Brighton, Royal Alexandria Hospital for Sick Children.*—H.S. At rate of £100.
*Bristol Royal Infirmary.*—Hon. Physician.
*Burton-on-Trent General Infirmary.*—Cas. O. and H.P. Each £150.
*Canterbury Borough Mental Hospital.*—Asst. M.O. £350.
*Central London Ophthalmic Hospital, Judd-street, W.C.*—Pathologist. £105.
*Chelsea Hospital for Women, Arthur-street, S.W.*—Jun. H.S. At rate of £100. Surgeon. Also Pathologist. £40.
*City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.*—Res. M.O. £250. Also H.P. At rate of £100.
*Dewsbury and District General Infirmary.*—Second H.S. £150.
*Doncaster Royal Infirmary.*—Cas. H.S. £175.
*East Ham Memorial Hospital, Shrewsbury-road, E.*—Res. M.O. At rate of £200.
*Great Yarmouth General Hospital.*—Two H.S.'s. Each £140.
*Hampstead General and N.W. London Hospital, Haverstock-hill, N.W.*—Surgeon to Out-patients. Also Anæsthetist. £25.
*Hospital for Sick Children, Great Ormond-street, W.C.*—Part-time Jun. Cas. O. At rate of £150. Also H.P. and H.S. Each at rate of £100.
*Infants Hospital, Vincent-square, Westminster, S.W.*—H.P. £75.
*Ipswich, East Suffolk and Ipswich Hospital.*—H.P. and Two H.S.'s. Each at rate of £120.
*King Edward Memorial Hospital, Ealing.*—Pathologist. £170.
*Leamington Spa, Warneford General Hospital.*—Hon. Surgeon for Diseases of Ear, Nose and Throat.
*Leicester Royal Infirmary.*—Res. Asst. Anæsthetist. At rate of £250.
*Lister Institute of Preventive Medicine, Chelsea Bridge-road, S.W.* Institute Research Fellowship in Bacteriology. £500.
*Liverpool, Broadgreen Sanatorium.*—Asst. Res. M.O. £200.
*London County Council.*—Part-time M.O.'s for Training Ship, *Exmouth*; and Stifford and Grays Children's Home. At rate of £200 and £150 respectively.
*Lowestoft, St. Luke's Hospital.*—Res. Asst. M.O. £350.
*Manchester Babies' Hospital, Burnage Lane, Levenshulme.*—Sen. Res. M.O. At rate of £125.
*Plymouth, South Devon and East Cornwall Hospital.*—H.P. and H.S. At rate of £120 and £100 respectively.
*Poplar Hospital for Accidents, East India Dock-road, E.*—Sen. Res. O. £200.
*Preston, Lancs, Biddulph Grange Orthopædic Hospital.*—Sen. H.S. Also Jun. H.S. At rate of £250 and £150 respectively.
*Princess Elizabeth of York Hospital for Children, Shadwell, E.*—Res. M.O. £200.
*Reading, Royal Berkshire Hospital.*—H.S. £150.
*Rochdale Infirmary and Dispensary.*—Jun. H.S. £200.
*Royal Free Hospital, Gray's Inn-road, W.C.*—Cas. O. At rate of £150. Dist. Obstet. Asst. At rate of £100. Res. H.P.'s, H.S.'s, and Res. Anæsthetist, &c. Also First H.P.
*Royal National Orthopædic Hospital, 234, Gt. Portland-street, W.* H.S. for Country Branch. At rate of £150.
*Royal Northern Hospital, Holloway, N.*—Med. Reg. £100.
*Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.*—H.S. At rate of £100.
*South-Eastern Hospital for Children, Sydenham, S.E.*—Jun. Res. M.O. At rate of £120.
*South Shields, Ingham Infirmary.*—Jun. H.S. £150.
*Tilbury Hospital.*—Med. Supt. £200.
*University College Hospital, Gower-street, W.C.*—Hon. Clinical Asst., Hon. Asst. Radiologist. Also Hon. Orthodonist and Dental Surgeon.
*Wakefield Mental Hospital.*—Asst. M.O. £350.
*West London Hospital, Hammersmith-road, W.*—H.P. and Two H.S.'s. Each at rate of £100.
*Willesden General Hospital, N.W.*—Cas. O., H.S., and H.P. All at rate of £100.
*Winchester, Royal Hampshire County Hospital.*—H.S. At rate of £125.
*York County Hospital.*—H.P. £150.

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Rothwell (York).

ROYAL SANITARY INSTITUTE.—A sessional meeting of this institute was held at Durham during last week-end. On Friday the modern construction of infectious diseases hospitals was considered, after an address by Dr. J. A. Charles, deputy medical officer of Newcastle-on-Tyne. The subject of central hospitals with resident medical staffs was discussed, and Mr. T. C. Benfold, vice-chairman of the Durham county health committee, said the best interests of the community would be served by a full-time medical staff in a central hospital. "We ought to get away from the part-time medical officer," he said. "A person who is a local practitioner and at the same time a medical officer to a hospital is unlikely to give the best results to either hospital or patient. A local practitioner has first and foremost to look after his own patients before he spends his time at the hospital. A person who is making a livelihood from family patients has got to look there first. We want the best equipped medical men to deal with the hospitals."